

CURRICULUM VITAE
Piero Madau

EMPLOYMENT HISTORY

2010–: Director, The Next Generation Telescopes Science Institute (NEXSI)
2010–: Distinguished Professor of Astronomy and Astrophysics, UC Santa Cruz
2000-10: Professor of Astronomy and Astrophysics, UC Santa Cruz
1999-00: Assistant Director of Research, Institute of Astronomy, Cambridge
1992-99: Astronomer, Space Telescope Science Institute
1989-92: Allan C. Davis Fellow, The Johns Hopkins University
1987-89: Postdoctoral Fellow, California Institute of Technology

EDUCATION

1987: Ph.D., Astrophysics, International School for Advanced Studies, Trieste
1983: B.Sc., Physics, University of Florence

ACADEMIC ACTIVITIES

Professional Societies

1997–: International Astronomical Union
1988–: American Astronomical Society

Awards, Fellowships, and Distinctions

2015: The Johns Hopkins Society of Scholars
2014: Dannie Heineman Prize for Astrophysics, American Institute of Physics and American Astronomical Society
2009: ISI Thomson Highly-Cited Researcher
2008: OASCR Breakthrough Report on Recent Significant Advancements in Computational Science
2007-09: Innovative and Novel Computational Impact on Theory and Experiment (INCITE) DOE Award
2005: Humboldt Prize, Alexander von Humboldt Foundation
1999: Official Fellowship, Darwin College, University of Cambridge
1996: NASA/GSFC Group Award
1994: AURA Science Award
1989: Allan C. Davis Fellowship, The Johns Hopkins University
1983: International School for Advanced Studies Graduate Fellowship, Trieste
1983: Summa Cum Laude Graduation, Florence University

Named Lectures

2014: Schroedinger Lecture, University of Zurich/ETH
2014: B. Rossi Lectures, Arcetri Astronomical Observatory, Florence
2010: Arnold Rosenblum Memorial Lecture, Hebrew University, Jerusalem
2004: Bishop Lecture, Columbia University

OUTSIDE PROFESSIONAL ACTIVITIES

Service Activities (since 2005)

2015: Review Board, Leibniz Institute for Astrophysics Potsdam, Leibniz Association
2015: Review Panel, Cherenkov Telescope Array, Research Council of Norway
2014: Review Panel, NSF Astronomy and Astrophysics
2013: Selection Committee, Livio Gratton Prize
2012: Review Panel, NASA Astrophysics Theory Program
2011: Review Board, Deutsche Forschungsgemeinschaft Excellence Program
2010: Science Prioritization Panel on Optical and Infrared Astronomy from the Ground, National Academy of Science
2009-12: Science Working Group, European Southern Observatory E-ELT
2009: Review Panel, Deutsche Forschungsgemeinschaft Priority Program
2008: DOE OASCR Panel on Scientific Challenges for Understanding the Quantum Universe and the Role of Computing at Extreme Scale
2008: NASA Science Mission Directorate Computational Modeling Capabilities Panel

2008: NASA Spitzer Telescope Cycle 5 Review Panel
2006: NASA Hubble Space Telescope Cycle 15 TAC
2005-: NASA Laser Interferometer Space Antenna (LISA) International Science Team

Editorial Boards

2005: Annual Review of Astronomy and Astrophysics, Guest Editor
2003-2009: Journal of Cosmology and Astroparticle Physics

External Appointments

2014: Schroedinger Visiting Professor, Pauli Center for Theoretical Studies, University of Zurich/ETH
2013: Visiting Member, Institute for Advanced Study, Princeton
2009: Raymond and Beverly Sackler Visiting Professor, Institute of Astronomy, Cambridge
2005: Visiting Member, Institute for Advanced Study, Princeton
2004: Visiting Member, Kavli Institute for Theoretical Physics, UCSB
2003: Visiting Astronomer, Carnegie Observatories, Pasadena
2000: Rossi Fellow, Observatory of Arcetri, Florence
1999: Visiting Member, Institute for Theoretical Physics, UCSB

Seminars, Colloquia, and Conference Talks (since 2005)

2015: AAS Seattle, European Southern Observatory, IAP, Sexten Center for Astrophysics, University of Chicago
2014: UC Irvine, CITA, Observatory of Rome, University of Zurich
2013: IAS Princeton, University of Chicago, IAP, University of Cambridge
2012: Stockholm University, AAS Anchorage, MIT, University of Cambridge, UC Santa Barbara
2011: Hebrew University, University of Cambridge
2009: Carnegie Mellon University, University of Arizona, Caltech, Johns Hopkins University
2008: Harvard University, Observatory of Padua, University of Massachusetts, UC Santa Barbara
2007: MPE Garching, KIPAC Stanford, IAP, University of Oxford, European Southern Observatory, Astronomical Observatory of Trieste, University of Cambridge, MPA
2006: UC Berkeley
2005: IAS Princeton, MPA Heidelberg, MPA

STUDENTS AND RESEARCH ASSOCIATES

Senior Thesis

Graduate Students

Valery Rashkov (Ph.D. 2013), Javiera Guedes (Ph.D. 2011), Xian Chen (Ph.D. 2010), Rudy Gilmore (Ph.D. 2009), Alberto Sesana (Insubria University, Ph.D. 2007), Michael Kuhlen (Ph.D. 2006), Marta Volonteri (University of Milan, Ph.D. 2002), Cristiano Porciani (ISAS Trieste, Ph.D. 1999), Lucia Pozzetti (University of Bologna, Ph.D. 1997), Francesco Haardt (ISAS Trieste, Ph.D. 1995)

Postdoctoral Associates

Ryan Cooke (Hubble Fellow 2014), Annalisa Pillepich (2011), Sijing Shen (2010), Marcel Zemp (2006), Quingjuan Yu (2006), Juerg Diemand (Hubble Fellow 2004), Ben Metcalf (Hubble Fellow 2002), Jennifer Lotz (2002), Marta Volonteri (2002)

PUBLICATIONS

More than 200 publications, 27,500 citations, Hirsch 'h' index = 80, see <http://scholar.google.com/citations?user=FuAjJpcAAAAJ&hl=en>

PUBLICATIONS (LAST 5 YEARS)

45. Lisanti, M., Spergel, D. N., & **Madau, P.** 2015, “Signatures of Kinematic Substructure in the Galactic Stellar Halo”, PhRvD, submitted (arXiv:1410.2243)
44. Puchwein, E., Bolton, J. S., Haehnelt, M. G., **Madau, P.**, & Becker, G. D. 2015, “The Photoheating of the Intergalactic Medium in Synthesis Models of the UV Background”, MNRAS, in press (arXiv:1410.1531)
43. Shen, S., Cooke, R. J., Ramirez-Ruiz, E., **Madau, P.**, Mayer, L., & Guedes, J. 2015, “The History of r -Process Enrichment in the Milky Way”, ApJ, submitted (arXiv:1410.1531)
42. Ngan, W., Bozek, B., Carlberg, R. G., Wyse, R. F. G., Szalay, A. S., & **Madau, P.** 2015, “Simulating Tidal Streams in a High Resolution Dark Matter Halo”, ApJ, in press (arXiv:1411.3760)
41. Governato, F., Weisz, D., Pontzen, A., et al. 2015, “Faint Dwarfs as a Test of DM Models: WDM vs. CDM”, MNRAS, 448, 792
40. Becker, G. D., Bolton, J. S., **Madau, P.**, et al. 2015, “Evidence of Patchy Hydrogen Reionization from an Extreme Ly α Trough Below Redshift Six”, MNRAS, 447, 3402
39. Pillepich, A., **Madau, P.**, & Mayer, L. 2015, “Building Late-Type Spiral Galaxies by In-Situ and Ex-Situ Star Formation”, ApJ, 799, 184
38. **Madau, P.**, & Dickinson, M. 2014, “Cosmic Star Formation History”, ARAA, 52, 415
37. Shen, S., **Madau, P.**, Conroy, C., Governato, F., & Mayer, L. 2014, “The Baryon Cycle of Dwarf Galaxies: Dark, Bursty, Gas-Rich Polluters”, ApJ, 792, 99
36. Cooke, R. J., & **Madau, P.** 2014, “Carbon-Enhanced Metal-Poor Stars: Relics from the Dark Ages”, ApJ, 791, 116
35. **Madau, P.**, Weisz, D. R., & Conroy, C. 2014, “Reversal of Fortune: Increased Star Formation Efficiencies in the Early Histories of Dwarf Galaxies?”, ApJL, 790, L17
34. Kollmeier, J. A., Weinberg, D. H., Oppenheimer, B. D., et al. 2014, “The Photon Underproduction Crisis”, ApJL, 789, L32
33. **Madau, P.**, Shen, S., & Governato 2014, “Dark Matter Heating and Early Core Formation in Dwarf Galaxies”, ApJL, 789, L17
32. **Madau, P.**, Haardt, F., & Dotti, M. 2014, “Super-Critical Growth of Massive Black Holes from Stellar-Mass Seeds”, ApJL, 784, L38
31. Pillepich, A., Kuhlen, M., Guedes, J., & **Madau, P.** 2014, “The Distribution of Dark Matter in the Milky Way’s Disk”, ApJ, 784, 161
30. Yang, L. F., Silk, J., Szalay, A. S., Wyse, R. F. G., Bozek, B., & **Madau, P.** 2014, “Dark Matter Contribution to Galactic Diffuse Gamma Ray Emission”, PRD, 89, 063530
29. Cantalupo, S., Arrigoni-Battaia, F., Prochaska, J. X., Hennawi, J., & **Madau, P.** 2014, “A Cosmic Web Filament Revealed in Lyman- α Emission Around a Luminous High-Redshift Quasar”, Nature, 506, 63
28. Prochaska, J. X., **Madau, P.**, O’Meara, J. M., & Funagalli, M. 2014, “Towards a Unified Description of the Intergalactic Medium at Redshift $z \approx 2.5$ ”, MNRAS, 438, 476
27. Kim, J.-H., Abel, T., Agertz, O., et al. 2014, “The *AGORA* High-Resolution Galaxy Simulations Comparison Project”, ApJS, 210, 14
26. Rashkov, V., & **Madau, P.** 2014, “A Population of Relic Intermediate-Mass Black Holes in the Halo of the Milky Way”, ApJ, 780, 187
25. Kuhlen, M., **Madau, P.**, & Krumholz, M. 2013, “Dwarf Galaxy Formation with H₂-Regulated Star Formation: II. Gas-Rich Dark Galaxies at Redshifts $z \gtrsim 2.5$ ”, ApJ, 776, 34
24. Inoue, K. T., Rashkov, V., Silk, J., & **Madau, P.** 2013, “Direct Gravitational Imaging of Intermediate Mass Black Holes in Extragalactic Halos”, MNRAS, 435, 2092
23. Rashkov, V., Pillepich, A., Deason, A. J., **Madau, P.**, Rockosi, C. M., Guedes, J., & Mayer, L. 2013, “A “Light,” Centrally-Concentrated Milky Way Halo?”, ApJL, 773, L32

22. Bird, J. C., Kazantzidis, S., Weinberg, D. H., Guedes, J., Callegari, S., Mayer, L., & **Madau, P.** 2013, "Inside Out and Upside Down: Tracing the Assembly of a Simulated Disk Galaxy Using Mono-Age Stellar Populations", *ApJ*, 773, 43
21. Guedes, J., Mayer, L., Carollo, M., & **Madau, P.** 2013, "Bulge Formation as a Dynamical Rather Than a Secular Process", *ApJ*, 772, 36
20. O'Meara, J. M., Prochaska, J. X., Worseck, G., Chen, H.-W., & **Madau, P.** 2013, "The ACS+WFC3 Survey for Lyman Limit Systems II: Science", *ApJ*, 765, 137
19. Shen, S., **Madau, P.**, Guedes, J., Mayer, L., Prochaska, J. X., & Wadsley, J. 2013, "The Circumgalactic Medium of Massive Galaxies at $z \sim 3$: a Test for Stellar Feedback, Galactic Outflows, and Cold Streams", *ApJ*, 765, 89
18. Kuhlen, M., Guedes, J., Pillepich, A., **Madau, P.**, & Mayer, L. 2013, "An Off-Center Density Peak in the Milky Way's Dark Matter Halo?", *ApJ*, 765, 10
17. Shen, S., **Madau, P.**, Aguirre, A., Guedes, J., Mayer, L., & Wadsley, J. 2012, "The Origin of Metals in the Circumgalactic Medium of Massive Galaxies at $z = 3$ ", *ApJ*, 760, 50
16. Schlaufman, K. C., Rockosi, C. M., Lee, Y. S., Beers, T. C., Prieto, C. A., Rashkov, V., **Madau, P.**, & Bizyaev, D. 2012 "Insight Into the Formation of the Milky Way Through Cold Halo Substructure. III. Statistical Chemical Tagging in the Smooth Halo", *ApJ*, 749, 77
15. Kuhlen, M., Krumholz, M., **Madau, P.**, Smith, B. D., & Wise, J. H. 2012, "Dwarf Galaxy Formation with H_2 -Regulated Star Formation", *ApJ*, 749, 36
14. Haardt, F., & **Madau, P.** 2012, "Radiative Transfer in a Clumpy Universe: IV. New Synthesis Models of the Cosmic UV/X-Ray Background", *ApJ*, 746, 125
13. Rashkov, V., **Madau, P.**, Kuhlen, M., & Diemand, J. 2012, "On the Assembly of the Milky Way Dwarf Satellites and Their Common Mass Scale", *ApJ*, 745, 142
12. Grogin, N. A., Kocevski, D. D., Faber, S. M., et al. 2011, "CANDELS: The Cosmic Assembly Near-Infrared Deep Extragalactic Legacy Survey", *ApJS*, 197, 35
11. Koekemoer, A. M., Faber, S. M., Ferguson, H. C., et al. 2011, "CANDELS: The Cosmic Assembly Near-Infrared Deep Extragalactic Legacy Survey - The Hubble Space Telescope Observations, Imaging Data Products and Mosaics", *ApJS*, 197, 36
10. Gonzalo Díaz, C., Ryan-Weber, E. V., Cooke, J., Pettini, M., & **Madau, P.** 2011, "A Galaxy as the Source of a CIV Absorption System Close to the Epoch of Reionization", *MNRAS*, 418, 820
9. Guedes, J., Callegari, S., **Madau, P.**, & Mayer, L. 2011, "Forming Realistic Late-Type Spirals in a Λ CDM Universe: The Eris Simulation", *ApJ*, 742, 76
8. O'Meara, J. M., Prochaska, J. X., Chen, H.-W., & **Madau, P.** 2011, "The ACS+WFC3 Survey for Lyman Limit Systems I: The Data", *ApJS*, 195, 16
7. Guedes, J., **Madau, P.**, Mayer, L., & Callegari, S. 2011, "Recoiling Massive Black Holes in Gas-Rich Galaxy Merger Remnants", *ApJ*, 729, 125
6. Chen, X., Sesana, A., **Madau, P.**, & Liu, F. K. 2011, "Tidal Stellar Disruptions by Massive Black Hole Pairs: II. Decaying Binaries", *ApJ*, 729, 13
5. Anderson, B., Kuhlen, M., Diemand, J., Johnson, R., & **Madau, P.** 2010, "Fermi-LAT Sensitivity to Dark Matter Annihilation in Via Lactea II Substructure", *ApJ*, 718, 899
4. Guedes, J., **Madau, P.**, Kuhlen, M., Diemand, J., & Zemp, M. 2010, "Simulations of Recoiling Massive Black Holes", *IAUS*, 267, 262
3. **Madau, P.** 2010, "The Dawn of Galaxies", 2010ihea.book..141M
2. Kuhlen, M., Weiner, N., Diemand, J., **Madau, P.**, Moore, B., Potter, D., Stadel, J., & Zemp, M. 2010, "Dark Matter Direct Detection with Non-Maxwellian Velocity Structure", *JCAP*, 02, 030
1. Governato, F., Brook, C., Mayer, L., Brooks, A., Rhee, G., Wadsley, J., Jonsson, P., Willman, B., Stinson, G., Quinn, T., & **Madau, P.** 2010, "Bulgeless Dwarf Galaxies and Dark Matter Cores from Supernova-Driven Outflows", *Nature*, 463, 203