

## Piero Madau

Professor, Department of Astronomy and Astrophysics  
University of California, Santa Cruz

### INTERESTS AND EXPERTISE

Cosmology, high-energy astrophysics

### EDUCATION

1987 Ph.D., Astrophysics, International School for Advanced Studies, Trieste  
1985 M.Sc., Astrophysics, International School for Advanced Studies, Trieste  
1983 B.Sc., Physics, University of Florence

### POSITIONS HELD

2000- Professor of Astronomy and Astrophysics, University of California Santa Cruz  
1999-00 Assistant Director of Research, Institute of Astronomy, Cambridge  
1997-99 Associate Astronomer, Space Telescope Science Institute  
1992-97 Assistant Astronomer, Space Telescope Science Institute  
1989-92 Allan C. Davis Fellow, The Johns Hopkins University  
1987-89 Research Fellow, California Institute of Technology

### HONORS AND AWARDS (selected)

2005 A. von Humboldt Senior Research Award, Max Planck Institut fur Astrophysik, Garching  
2004 Bishop Lecturer, Columbia University  
2000-03 Bruno Rossi Visiting Fellowship, Observatory of Arcetri, Florence  
1999-00 Official Fellowship, Darwin College, Cambridge University  
1996 NASA/GSFC Group Award  
1994 AURA Science Award  
1989-92 Allan C. Davis Fellowship, JHU/STScI  
1983-87 ISAS Graduate Fellowship, Trieste  
1983 Summa Cum Laude graduation from Florence University

### EXTERNAL RESEARCH SUPPORT (\$20,000 and over)

2007-08	New Synthesis Models of the Extragalactic Ionizing Background (PI), NASA/HST Theory	\$90,000
2006-07	An ACS Prism Snapshot Survey for $z \sim 2$ Lyman Limit Systems (Co-I), NASA/HST GO	\$150,000
2005-06	The Low Redshift IGM Enrichment History (Co-I), NASA/HST Archival	\$112,000
2004-07	The Assembly, Merging, and Emission History of Supermassive Black Holes in Hierarchical Models of Galaxy Formation (PI), NASA ATP	\$268,000
2002-07	A Multiwavelength Study of Normal and Active Galaxies at Early Epochs (PI), NASA LTSA	\$489,000
2002-04	First Light in the Universe: Probing the End of the Dark Ages (PI), NSF	\$223,000
2002-03	The Great Observatories Origins Deep Survey: Imaging with ACS (Co-I), NASA/HST Treasury	\$64,000
2002-03	Galaxy Interaction Simulations for Interpretation of HST Observations (Co-I), NASA/HST Theory	\$90,000
2001-02	The Ionization History of the Intergalactic Medium (PI), NASA ATP	\$67,000

### RECENT PUBLICATIONS (selected)

The birth of a supermassive black hole binary in a gas-rich galaxy merger. Mayer, L., Kazantzidis, S., Madau, P., Colpi, M., Quinn, T., & Wadsley, J., *Science*, **316**, 1874, 2006.

Hypervelocity stars and the environment of Sgr A\*. Sesana, A., Haardt, F., & Madau, P., *MNRAS*, **379**, L45, 2007.

Dark matter substructure and  $\gamma$ -ray annihilation in the Milky Way halo. Diemand, J., Kuhlen, M., & Madau, P., *ApJ*, **657**, 262, 2007.

Astronomy: Trouble at first light. Madau, P., *Nature*, **440**, 1002, 2006

The first miniquasar. Kuhlen, M., & Madau, P., *MNRAS*, **363**, 1069, 2005.

The detectability of pair-production supernovae at  $z < 6$ . Scannapieco, E., Madau, P., Woosley, S., Heger, A., & Ferrara, A., *ApJ*, **633**, 1031, 2005.

Population III and the near-infrared background excess. Madau, P., & Silk, J., *MNRAS*, **359**, L37, 2005.

The distribution and cosmic evolution of massive black hole spins. Volonteri, M., Madau, P., Quataert, E., & Rees, M. J., *ApJ*, **620**, 69, 2005.

The effect of gravitational-wave recoil on the demography of massive black holes. Madau, P., & Quataert, E., *ApJ*, **606**, L17, 2004.

Early reionization by miniquasars'. Madau, P., Rees, M. J., Volonteri, M., Haardt, F., & Oh, S. P., *ApJ*, **604**, 484, 2004.

## UNIVERSITY SERVICE (selected)

### Administrative appointments

2005-06 Member, Lick Director search committee  
Member, Committee on Academic Personnel (CAP)  
2004-06 Member, Mathematics search committee  
2003-04 Member and/or Chair, Ad hoc committee  
2002-04 Distinguished visitor committee  
2001-06 Member and/or Chair, Astronomy department preliminary exam committee  
2001-02 Undergraduate advisory committee (chair)  
2001 Lick Observatory recruitment committee  
2000-05 Member and/or Chair, Astronomy department colloquia committee

## PROFESSIONAL ACTIVITIES (selected)

### Consultative or other service to civic, state, or national governmental agencies

2005 Visiting Member, Institute for Advanced Studies, Princeton  
2004 Visiting Member, Kavli Institute for Theoretical Physics, UCSB  
2003 Visiting Astronomer, Carnegie Observatories, Pasadena  
2000-03 Visiting Fellow, Observatory of Arcetri, Florence

### Five major presentations

2007 "Galaxy formation, cold dark matter substructure, and GLAST," AAS/AAPT joint meeting, AAS meeting 209, Seattle  
2006 "The astrophysics of early galaxy formation," in The Emission Line Universe: XVIII Canary Islands Winter School of Astrophysics, Tenerife  
2006 "Formation and early evolution of massive black holes," in Black Holes—from Stars to Galaxies, IAU Symposium 238, Prague  
2005 "The Thermal History of the Universe," INPE Advanced Course, A Roadmap for Cosmology, San Paulo  
2003 "Joint evolution of black holes and galaxies," Graduate School in Contemporary Relativity and Gravitational Physics, Villa Olmo, Como

## STUDENTS AND FELLOWS SUPERVISED (lifetime)

### Ph.D. Advisees

Javiera Guedes  
Karoline Gilbert  
Ryan Montgomery  
Alberto Sesana  
Michael Kuhlen  
Marta Volonteri

### Postdoctoral Fellows

Marcel Zemp  
Quingjuan Yu  
Juerg Diemand  
Ben Metcalf  
Jennifer Lotz  
Marta Volonteri

### Senior Theses

Denise Spangler  
Tero Isotalo

Cristiano Porciani  
Lucia Pozzetti  
Francesco Haardt