

Charles F. Gammie

Contact

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Research Interests

I am a theoretical and computational astrophysicist working in black hole accretion, formation of the Moon, planet formation, star formation, cosmic ray transport, and interstellar turbulence. I have developed numerical methods for modeling relativistic plasmas, relativistic radiation magnetohydrodynamics, and radiative processes in hot plasmas.

Positions Held

University of Illinois at Urbana-Champaign, Departments of Astronomy and Physics

August 2023—: Stanley O. Ikenberry Chair

August, 2005—: Professor

February, 2021— August 2023: Donald Biggar Willett Chair

August, 2011—August, 2014: Chair, Astronomy Department

August, 2004—August, 2005: Associate Professor

January, 1999—August, 2004: Assistant Professor

Harvard-Smithsonian Center for Astrophysics

September, 1998—December, 1998: Research Associate, Radio and Geoastronomy Division

September, 1994—August 1998: postdoctoral fellow with Ramesh Narayan, Theoretical Astrophysics Division

University of Cambridge

January—June 1998: Rosenbaum Fellow, Isaac Newton Institute

April—June 1997: postdoctoral fellow, Institute of Astronomy

University of Virginia

January, 1992—August, 1994: Virginia Institute for Theoretical Astronomy Postdoctoral Fellow

Bell Laboratories

June—August, 1988 and 1989: Consultant, Radio Physics Group, Crawford Hill.

Education

Princeton University, September, 1987—December, 1991

Ph.D. in Astrophysical Sciences, June, 1992. Thesis: “The Formation of Giant Molecular Clouds.” Advisor: Jeremy Goodman. Princeton-Von Neumann Supercomputing Award.

Yale University, September, 1983—June, 1987

B.Sc. in Mathematics, June, 1987. Senior Thesis: “Stability of Spherically Symmetric Accretion onto a Schwarzschild Black Hole.” Advisor: Vincent Moncrief. Beckwith Prize in Astronomy, DeForest Prize in Mathematics.

Awards and Activities

Elected to American Academy of Arts and Sciences, 2024.

Kavli Visitor, University of Cambridge, October 2023.

Distinguished Visiting Research Chair, Perimeter Institute, 2023–.

Breakthrough Prize in Fundamental Physics, Einstein Medal of the Albert Einstein Society, Bruno Rossi Prize of the American Astronomical Society, Bloomberg 50 for 2019 (as a member of the Event Horizon Telescope Collaboration).

Visiting Fellow, All Souls College, University of Oxford, Michaelmas Term, 2015.

Visiting Professor, Department of Physics, University of Oxford, August 2015—July 2016.

Simons Fellow in Theoretical Physics, August 2015—May 2016.

University Scholar, University of Illinois, Sept. 2007—Aug. 2010.

Richard and Margaret Romano Professorial Scholar, Oct. 2007—Oct. 2010.

Member, Institute for Advanced Study, Sept. 2006—June 2007.

Fellow of the American Physical Society, 2006.

Sony Faculty Fellow, Sept. 2005—Aug. 2008.

Beckman Fellow, 2002—2003, Center for Advanced Study, University of Illinois at Urbana-Champaign.

Presidential Early Career Award for Scientists and Engineers, July 2002.

NCSA, Faculty Fellow, 2001-2002, University of Illinois at Urbana-Champaign.

Professional Societies

American Physical Society (fellow)

American Astronomical Society

American Geophysical Union

American Association for the Advancement of Science

9 August 2024