

CURRICULUM VITAE: DOUGLAS P. HAMILTON

Career Summary

Professor, University of Maryland, Astronomy Dept., 9/1995 – Present.
Postdoctoral Scholar, MPI Kernphysik, Heidelberg Germany, 12/1993 – 9/1995.
Cornell University, M.S. and Ph.D. in Applied Physics, 8/1990 and 1/1994.
Stanford University, B.S. in Physics with Distinction and Honors, 6/1988.

Academic Honors

NASA Group Achievement Award (New Horizons Team) 2016.
U. Maryland Board of Regent's Faculty Award for Scholarship 2010.
Dean's Award for Excellence in Teaching 1997, 2008.
U. Maryland Parents Association, Outstanding Faculty Nominee 2003.
Certificate of Teaching Excellence 2003.
Asteroid 12494 DH11 renamed Doughamilton 2000.
Harold C. Urey Prize for Outstanding Research in Planetary Science 1999.
NSF CAREER Award "Orbital Dynamics of Solar System Dust" 1998-2003.

Professional Activities

Co-Investigator with NASA's Juno mission to Jupiter.
Collaborator with NASA's New Horizons mission to Pluto.
Co-Investigator with the Galileo Dust Detection System (DDS) Team.
Reviewer on over 150 occasions for 18 scientific journals and 6 book publishers.
Reviewer for 6 domestic and 3 foreign funding agencies.
Member of IAU C-A4 Organizing Committee (2015-Present); DDA Vice Chair, Chair, Past Chair (2011-2014); DDA Student Participation Committee (2005-2007); AAS Shapley Lecturer (2006-Present); DDA Committee (2003-2005); DPS Prize Committee (2000-2003); AAS Millennium Speaker (2000-2003); Planetary Data System Rings Node Advisory Council (1997-Present); *Icarus* editorial board (1999-2002); AAS, AGU, DDA, DPS and IAU societies.

Research Interests

Solar System Dynamics: Orbital Evolution; Celestial Mechanics; Resonances; Numerical Methods; Rotational Dynamics; Charged Particle Motion.
Origins: Satellite and Ring Systems; The Solar System; Extrasolar Planets.
Astrophysics: Black Holes; Neutron Stars; Globular Clusters.

Research Highlights

Co-Discovered: Pluto's Moons Kerberos and Styx (2011, 2012); Saturn's Largest Ring (2009).
Explained: The Formation of Pluto's Heart (2016); The Structure of Jupiter's Gossamer Rings (2008); How Neptune Captured Triton (2006); Why Saturn is Tilted (2004); How Pulsar Planets Formed (2001).

Selected Invited Talks

IAU Meeting, Iasi, Romania (2022). Saturn's Ring Spokes.
Aida Workshop, Nice, France (2016). Modeling non-spherical binary asteroids.
Triple Evolution and Dynamics (2015), Haifa, Israel. Dynamics of Pluto-Charon.
Small Body Dynamics Meeting (2014), Ubatuba, Brazil. The Origin of Titan.
COSPAR (2014), Moscow, Russia. Dust Dynamics at Saturn.

Teaching Experience

Graduate: Formation of the Solar System; Orbital Dynamics; Planetary Science.

Undergraduate Major: Solar System; Orbital Dynamics; Intro to Astrophysics.

Undergraduate Non-Major: Intro to Astronomy; Solar System; Collisions in Space; Energy Resources and Policy.

Outreach: Developed the Astronomy Workshop (<http://janus.astro.umd.edu/>), an interactive set of online educational tools that has received multiple awards.

Relevant Scientific Publications

Over 150 - see <http://www.astro.umd.edu/~hamilton/research/pubs.html>.

Agnor, C. and D.P. Hamilton 2006. Neptune's capture of its moon Triton in a binary-planet gravitational encounter. *Nature* **441**, 192-194. (With cover artwork)

Ćuk, M., D.P. Hamilton, and M.J. Holman 2012. Long-term stability of horseshoe orbits. *MNRAS* **426**, 3051-3056.

Ćuk, M., D.P. Hamilton, S.J. Lock, and S.T. Stewart 2016. Tidal Evolution of the Moon from a high-obliquity high-angular momentum Earth. *Nature* **539**, 402-406.

Hamilton, D.P. and Wm. R. Ward 2004. Tilting Saturn II: Numerical model. *Astron. J.* **128**, 2510-2517.

Hamilton, D.P. and H. Krüger 2008. The sculpting of Jupiter's gossamer rings by its shadow. *Nature* **453**, 72-75. (Cover artwork in *Stern und Weltraum*, 3/2009)

Hamilton, D.P., A.J. Verbiscer, and M.F. Skutskie 2015. Small particles dominate Saturn's Phoebe ring to surprisingly large distances. *Nature* **522**, 185-187.

Hamilton, D.P. and the New Horizons Geology, Geophysics, and Imaging Theme Team 2016. The rapid formation of Sputnik Planitia early in Pluto's history. *Nature* **540**, 97-99.

Hedman, M., J.A. Burns, D.P. Hamilton, and M.R. Showalter 2013. Of horseshoes and heliotropes: Dynamics of dust in the Encke Gap. *Icarus* **223**, 252-276.

Nimmo, D.P. Hamilton and the New Horizons Geology, Geophysics, and Imaging Theme Team 2016. Reorientation of Sputnik Planitia implies a subsurface ocean on Pluto. *Nature* **540**, 94-96.

Philpott, C., D.P. Hamilton, and C.B. Agnor 2010. Three-body capture of irregular satellites: Application to Jupiter. *Icarus* **208**, 824-836.

Showalter M.R. and D.P. Hamilton 2015. Resonant interactions and chaotic rotation of Pluto's small moons. *Nature* **522**, 45-49. (With cover artwork)

Tamayo, D., J.A. Burns, D.P. Hamilton, and P.D. Nicholson 2013. Dynamical instabilities in high-obliquity systems. *Astron. J.* **145**, 54-65.

Verbiscer, A.J., M.F. Skutskie and D.P. Hamilton 2009. Saturn's largest ring. *Nature* **461**, 1098-1100.

Zhang, K. and D.P. Hamilton 2007. Orbital resonances in the inner neptunian system I: the 2:1 Proteus-Larissa mean-motion resonance. *Icarus* **188**, 386-399. (With cover artwork)

Zhang, K. and D.P. Hamilton 2008. Orbital resonances in the inner neptunian system II: Resonant history of Proteus, Larissa, Galatea, and Despina. *Icarus* **193**, 267-282.

Zhang, K., D.P. Hamilton, and S. Matsumura 2013. Secular orbital evolution of compact planetary systems. *Ap. J.* **778**, 1-17.