

2010 DPS Prize Recipients

Jeffrey N. Cuzzi - 2010 [Gerard P. Kuiper Prize](#) [1]

The Division for Planetary Sciences of the American Astronomical Society awards the 2010 Gerard P. Kuiper Prize for outstanding contributions to the field of planetary science to Jeffrey N. Cuzzi, NASA Ames Research Center. Jeff has made many pioneering contributions to our understanding of the formation and evolution of planetary rings and planetesimals. Jeff's work in this area spans four decades—from his early observational and theoretical work on rings, through his participation in NASA's Voyager and Cassini missions, to his most recent state-of-the-art fluid dynamical modeling efforts that put us on the cusp of uncovering the mysteries of how planets form. Jeff's quest for answers to fundamental questions about ring systems and planetary formation kept him attacking cutting edge problems that required mastery of several disciplines (e.g., radiative transfer, nebular dynamics, cosmochemistry), and an approach that often crossed into the fields of astrophysics and meteoritics. No better example of this is his work on planet formation. A recurring theme in this area has been his numerous studies of the coupled dynamics of particles and gas in the solar nebula, complementing and even moving beyond the pioneering work of Stu Weidenschilling. His approach ranged from simple yet elegant analytical theories, to complex non-linear codes running on state-of-the-art machines. Like a skilled craftsman, Jeff chose his tools carefully and over the years he solved or shed light on very complex problems such as the puzzling size sorting of chondrules in primitive meteorites, the apparent lack of isotopic fractionation of some of their key elements, the retention of high temperature, early-formed mineral grain in the nebula, and how the first asteroid-size bodies may form directly from small particles. Along the way of his career, Jeff has become an expert observer, theoretician, and modeler - a rare combination in today's era of high specialization; and he has assembled, led, and/or collaborated with teams of international and interdisciplinary membership, including his work as Cassini Interdisciplinary Scientist for Rings. It is also worth mentioning Jeff's generous and tireless service work to the community as a mentor, editor, reviewer, or panel expert, which speaks volumes about his dedication to the field. He is one of the most respected, admired, and sought after individuals in our field.

Jeff's many and multifaceted contributions to the origins of ring systems and planetesimals are well known. Thanks to his work, the planetary community now possesses deep insight into the richness and complexity of phenomena in rings, and a complete theory on planet formation is, perhaps, in sight. It is therefore fitting that the Division for Planetary Science bestow our highest honor this year—the 2010 Gerard P. Kuiper Prize—to Jeffrey N. Cuzzi.

Jonathan J. Fortney - 2010 [Harold C. Urey Prize](#) [2]

The Division for Planetary Sciences of the American Astronomical Society awards the 2010 Harold C. Urey Prize for outstanding achievement in planetary research by a young scientist to Jonathan J. Fortney, Assistant Professor, Department of Astronomy and Astrophysics, University of California, Santa Cruz. In his short career Jonathan has made a major impact on studies of the evolution of planets, the structure and radii of planets, and on studies of planetary atmospheres. Much of this work—but not all—has focused on studies of extrasolar planets. For his thesis work Jonathan studied the evolution of Saturn while accounting for He differentiation. While He differentiation had long been suspected of accounting for both the low observed abundance and high heatflow, Jonathan was the first to demonstrate that a self-consistent description of Saturn's interior, heatflow, and high pressure physics could indeed explain the current state of the planet. Jonathan's models of planetary atmospheres over a wide range of objects from isolated brown dwarfs to close-in extrasolar giant planets has become a widely used tool for the community, and led to his selection as a Kepler participating scientist.

Jonathan's work on interpreting Spitzer observations of exoplanets led to his thorough exploration of the role titanium oxide could play in heating the stratospheres of the close-in giant planets, yielding the most-cited planetary science theory paper of 2008—one year after his 2007 paper on planetary atmosphere models earned the same distinction.

As a trained planetary scientist, Jonathan has been one of the relatively few to take on studies of extrasolar planets and this young field has been much richer for it. For the breadth of his work in revealing the workings of giant planets within and without our solar system, the Division for Planetary Sciences is pleased to award the 2010 Harold C. Urey Prize to Jonathan J. Fortney.

Alan Tokunaga - 2010 [Masursky Award](#) [3]

The Division for Planetary Science of the American Astronomical Society presents the 2010 Harold Masursky Award for outstanding service to planetary science and exploration to Alan Tokunaga, Astronomer at the Institute for Astronomy of the University of Hawaii. As the longest-serving Division Chief (director) of NASA's Infrared Telescope Facility (IRTF) since 2000 and deputy director in the mid-80's, Alan Tokunaga has played an indispensable role in the growth of ground-based infrared astronomy of the solar system, and in furthering planetary science as a whole. He has been the PI for a series of instruments for the IRTF, has strengthened the observatory so that it is a vital national and international resource, has provided wide-ranging NASA mission support, has contributed in fundamental ways to planetary science through his own research, and has furthered infrared astronomy by standardizing photometric systems and providing a compendium of our current knowledge of the field in Allen's Astrophysical Quantities. Alan Tokunaga's efforts have made it possible for all planetary scientists to have access to first-rate observing facilities. This includes international users, and many without access to facilities through their own institutions. Perhaps the greatest beneficiaries have been students. Many of today's planetary scientists "learned the ropes" as students at the IRTF. Alan has been a continuous source of support and expertise to users of IRTF and visitor instruments. His calm, yet strong, personality is ideal for a director of an observatory with many users.

The number of advances and discoveries in planetary science to which Alan Tokunaga was either a direct or an indirect contributor through his research and directorship of the IRTF is too long to list here. For his exemplary and far-reaching service to the planetary community, the Division for Planetary Science is pleased to present the 2010 Harold Masursky Award to Alan Tokunaga.

Carolyn C. Porco - 2010 [Sagan Medal](#) [4]

The Division for Planetary Sciences of the American Astronomical Society awards the 2010 Carl Sagan Medal for excellence in public communication by an active planetary scientist to Carolyn C. Porco, Senior Research Scientist at the Space Science Institute. Beginning with the Voyager mission, Carolyn proved herself a very capable public communicator for science and spokesperson for planetary science in particular. She spoke eloquently about the Voyager mission, planetary exploration, the upcoming Cassini/Huygens mission and other more difficult topics such as UFOs and extraterrestrial life. She immediately exhibited those qualities so important in a public communicator—animation, enthusiasm and ease of explanation. The general public does not speak science, and a scientist must not insist that they understand this language. Carolyn speaks the language of the public in her appearances and in her writing. She never hides behind science jargon. During the development of Cassini/Huygens, Carolyn defended the mission eloquently not just in the White House but also in a separate hearing by House Subcommittee on Science and Aeronautics. She effectively turned a disposition to cancel the mission into a real attitude of support inside the Administration and Congress. In the controversy surrounding the use of nuclear materials during the launch of Cassini-Huygens, Carolyn served again effectively as a public spokesperson in defending the mission against the irrational. Since the launch of Cassini/Huygens, Carolyn has been not just the Cassini imaging scientist but a strong public image-maker for the mission. Armed with the fabulous pictures from Cassini, and from Huygens, she has

made numerous appearances in public forums and in the media to spread enthusiasm and understanding for this outstanding mission. Carolyn has been equally eloquent on planetary exploration and other diverse topics in philosophy and science. There is no one else in the planetary science community who has made such a popular impression.

One of Carolyn's nominators pointed out that Carl Sagan was not just a rationalist, but was also a romantic who teased the human essence out of our science enterprise. Carolyn too is such a person, having conceived and followed through on the notion of sending Gene Shoemaker's ashes to the Moon on Lunar Prospector. For her myriad contributions in bringing planetary science to the public at large, the Division for Planetary Sciences is pleased to award the 2010 Carl Sagan Medal to Carolyn C. Porco.

George Musser - 2010 [Jonathan Eberhart Planetary Sciences Journalism Award](#) [5]

The Division for Planetary Sciences of the American Astronomical Society presents the 2010 Jonathan Eberhart Planetary Sciences Journalism Award to George Musser.

After undergraduate studies in electrical engineering and mathematics at Brown University, George started exploring the solar system during his graduate work at Cornell University. As a National Science Foundation Graduate Research Fellow at Cornell, he modeled mantle convection on Venus in order to explain the broad plateaus, known as coronae, mapped by the Magellan orbiter for his thesis. George has authored or co-authored peer-reviewed papers on impact-related surface features on Venus and has worked with eminent planetary scientists on studies of Mars and Europa. Thus, George is a science journalist who is actually one of "us".

However, toward the end of the twentieth century, a critical period during which the outlook for continued funding for planetary research turned bleak, George decided to pursue his other interest: writing about science. The loss to planetary science has resulted in an immense gain for the general public curious to learn about science. George spent five years with the Astronomy Society of the Pacific as editor of its Mercury magazine and its Universe in the Classroom tutorial series. In 1998 he began writing for Scientific American, where he is now a staff editor and writer.

His skills in explaining complex topics are evident in his writings. His book, *The Complete Idiot's Guide to String Theory*, leads one to believe that George will produce more masterpieces able to hold reader interest in a complex topic. Martin Rees writes in his foreword to George's book, "For aliens, the intricacies of string theory may be a doodle. But for most of us humans, they are a Himalayan challenge. That is why we should welcome a book such as this—written by an expert communicator—which aims to distill the essence of these daunting ideas into a palatable brew that we can all savour." We hope George continues to write about planetary science for years to come, and perhaps someday he will explain to us what makes Venus work. In the meantime, he is currently blogging about installing solar panels.

There is no better example of George's dedication to accuracy and clear, engaging writing than his article, "5 Essential Things to do in Space," which appeared in the October 2007 issue of *Scientific American*. There he describes the rationale for monitoring Earth's climate; preparing a defense for threatening asteroids; seeking life elsewhere; explaining the genesis of planets; and extending our explorations beyond the solar system. For this engaging and thought-provoking commentary, the Division for Planetary Sciences is pleased to present the 2010 Jonathan Eberhart Planetary Sciences Journalism Award to George Musser.



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