AAS Honors Distinguished Astronomers with 2012 Prizes


At its 219th semiannual meeting last week in Austin, Texas, the American Astronomical Society (AAS) named the recipients of its 2012 prizes for achievements in research, instrument development, education, and writing.

The Society's prestigious Henry Norris Russell Lectureship goes to W. David Arnett (University of Arizona) "for a lifetime of seminal contributions to the fields of stellar explosions, nuclear astrophysics, and hydrodynamics." Arnett has been a leader in developing our understanding of core-collapse processes and the fusion of new elements in massive stars. He has also done pioneering work on thermonuclear burning in white-dwarf stars and on the origin of Type Ia supernovae, which are at the center of contemporary observational cosmology.

The Newton Lacy Pierce Prize for outstanding achievement in observational research by an early-career astronomer goes to John A. Johnson (Caltech) "for major contributions to understanding fundamental relationships between extrasolar planets and their parent stars.” Johnson has found that planetary orbits can be tipped at a wide variety of angles with respect to their host stars’ spin axes. His work has also elucidated possible correlations between planet frequency and stellar mass and composition.

The Helen B. Warner Prize for a significant contribution to observational or theoretical astronomy by an early-career scientist goes to Eric B. Ford (University of Florida) "for his theoretical and computational research in the field of extrasolar planets, including groundbreaking work on the dynamical evolution of planetary systems and planet formation." Ford’s work has established the importance of mutual gravitational interactions within exoplanet systems and has aided the efficient design of new exoplanet searches.

The 2012 Joseph Weber Award for instrumentation goes to Thijs de Graauw (Atacama Large Millimeter/submillimeter Array) "for his leadership in the construction of powerful new astronomical instruments including the Short Wavelength Spectrometer on the Infrared Space Observatory (ISO) and the Heterodyne Instrument For the Infrared (HIFI) on Herschel."

The Beatrice M. Tinsley Prize recognizes an outstanding research contribution of an exceptionally creative or innovative character. For 2012 it goes to Ronald L. Gilliland (Pennsylvania State University) "for his innovative work on ultra-high-signal-to-noise observations related to time-domain photometry and the opening of this new frontier." Using NASA’s Kepler satellite, Gilliland has shown that virtually all stars vary in brightness at some level.

The Dannie Heineman Prize in Astrophysics, awarded in partnership with the American Institute of Physics, recognizes outstanding work by mid-career astronomers. The 2012 Heineman Prize goes to Chryssa Kouveliotou (NASA Marshall Space Flight Center) "for her
extensive accomplishments and discoveries in the areas of gamma-ray bursts and their afterglows, soft gamma repeaters, and magnetars." Kouveliotou is cited in particular for her ability to create collaborations and her effectiveness and insights in using multiwavelength observations to solve astrophysical problems.

The George Van Biesbroeck Prize honors a living individual for long-term extraordinary or unfailingly productive service to astronomy. C. Megan Urry (Yale University) is this year's recipient "for her tireless efforts to enhance the participation of women in astronomy and other scientific disciplines, through the organization of meetings, written works, lectures, and effective mentoring, done outside and in addition to her work as a scientist."

The 2012 Education Prize goes to Donald W. McCarthy (University of Arizona) "for his tireless efforts over the past three decades to educate and involve more than 1,500 students, teachers, and adults in astronomy and the scientific method using authentic inquiry." McCarthy runs the University of Arizona's Astronomy Camp each summer and has expanded his impact through extensive outreach to other organizations, most notably the Girl Scouts of America.

The Annie Jump Cannon Award for outstanding research and promise for future research by a woman goes to Heather Knutson (Caltech) "for her pioneering work on the characterization of exoplanetary atmospheres." Knutson's groundbreaking observations of wavelength-dependent thermal emission of exoplanets over large fractions of their orbit have revealed details of atmospheric dynamics, energy transport, inversion layers, and chemical composition. Her work has expanded the rich field of planetary characterization by providing new windows into the atmospheres of planets beyond the confines of our solar system.

The Chambliss Astronomical Writing Award for an academic book goes to Caleb A. Scharf (Columbia University) for his textbook "Extrasolar Planets and Astrobiology" (University Science Books, 2009). This book provides a rigorous treatment of astrobiological topics of contemporary interest; it spans a wide range of subjects including physics, astronomy, chemistry, and biology. It is likely to become the standard textbook for advanced undergraduates, or beginning graduate students, interested in the emerging field of astrobiology.

Recognizing the contribution of nonprofessionals to the advancement of astronomical research, the AAS gives the 2012 Chambliss Amateur Achievement Award to Georgia amateur astronomer Tim Puckett. His Puckett Observatory World Supernova Search program, which uses a custom-built and fully automated 24-inch telescope, has to date discovered more than 200 supernovae -- including the first one of 2012, found during the Austin AAS meeting. The quick identification of new supernovae by Puckett and his team members has allowed astronomers to observe exploding stars through important and previously unexplored stages of their evolution.

At the Austin AAS meeting, more than 330 students presented poster papers based on their research and competed for the Chambliss Astronomy Achievement Student Awards. About 100 professional astronomers fanned out across the exhibit hall to judge these presentations over several days, resulting in the awarding of 16 Chambliss medals for exemplary research. The names of the winners (and of additional students who were awarded honorable mentions) are posted online at

http://aas.org/prizes/chambliss_astronomy_achievement_student_awards

Division Prizes

The AAS's five subject-specific divisions also award prizes, and two of them have just selected their 2012 recipients.

The High Energy Astrophysics Division (HEAD) is awarding its Bruno Rossi Prize to Marco Tavani (Istituto Nazionale di Astrofisica-Istituto di Astrofisica Spaziale e Fisica Cosmica, Rome, Italy) and the AGILE team for the discovery of gamma-ray flares from the Crab.
Nebula, which had been thought to be a steady source of energy across much of the spectrum from visible light through gamma rays. AGILE ("Astorivelatore Gamma a Immagini Leggero") is an Italian space mission dedicated to observations of the gamma-ray universe, and Tavani is its principal investigator.

The George Ellery Hale Prize of the AAS Solar Physics Division (SPD) is awarded to a scientist for outstanding contributions to the field of solar astronomy. The 2012 prize goes to Don Reames (NASA Goddard Space Flight Center) "in recognition of his pioneering work on the composition and transport of solar energetic particles."

SPD's Karen Harvey Prize, which recognizes a significant contribution to the study of the Sun early in a person's professional career, goes to Dibyendu Nandi (Indian Institute of Science Education and Research, Kolkata) "for his advances in the use of kinematic dynamo models to elucidate the typical and atypical solar cycle, and for his outstanding leadership within the solar physics and space climate communities."

More information about AAS and Division prizes, along with lists of past recipients, can be found here: http://aas.org/grants/awards.php

Complete citations for all of the AAS prizes mentioned above are available from AAS Press Officer Rick Fienberg at the e-mail address and phone number at the top of this release (and again below).

The American Astronomical Society (AAS), established in 1899 and based in Washington, DC, is the major organization of professional astronomers in North America. Its membership of about 7,500 individuals also includes physicists, mathematicians, geologists, engineers, and others whose research and educational interests lie within the broad spectrum of subjects now comprising contemporary astronomy. The mission of the AAS (http://www.aas.org) is to enhance and share humanity’s scientific understanding of the universe. Among its many activities, the AAS publishes three of the leading peer-reviewed journals in the field: The Astrophysical Journal (http://apj.aas.org), The Astronomical Journal (http://aj.aas.org), and Astronomy Education Review (http://aer.aas.org).

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