President Bestows National Medals of Science and Technology

In a White House ceremony on 14 March, President Bush presented the National Medal of Science and the National Medal of Technology, the nation's highest honors for scientific research and innovation. Among the eight recipients of the National Medal of Science are four who were recognized for physics-related research.

G. Brent Dalrymple was honored for "his pioneering work in determining the geomagnetic polarity reversal timescale; a discovery that led to the theory of plate tectonics," according to the citation. He is a professor emeritus and former dean of Oregon State University's College of Oceanic and Atmospheric Sciences.

One medal went to **Riccardo Giacconi**, University Professor in the department of physics and astronomy at the Johns Hopkins University. He was cited for "his pioneering research in x-ray astronomy and for his leadership of major astronomy facilities."

John M. Prausnitz, professor of chemical engineering at the University of California, Berkeley, was recognized for "his development of engineering-oriented molecular thermodynamics, which provides a scientific method for the design, construction, and operation of chemical manufacturing plants toward economic efficiency, safety, minimum energy consumption, and environmental protection."

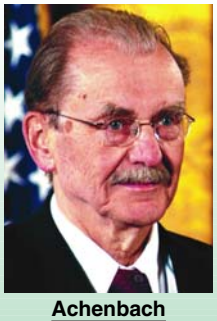
Dalrymple

Giacconi

Prausnitz

Snyder

Solomon H. Snyder garnered a medal for "contributions to the understanding of neurotransmitters, their receptors in the nervous system, mechanisms of action of psychoactive drugs, and pathways of signal transduction in the brain." He is a Distinguished Service Professor of neuroscience, pharmacology, and psychiatry at the Johns Hopkins University School of Medicine.



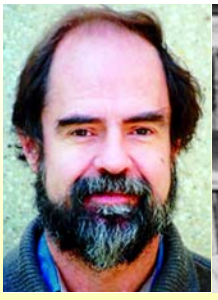
Achenbach

Among the three individuals, two companies, and one team honored with the National Medal of Technology was **Jan D. Achenbach**, Distinguished McCormick School Professor and Walter P. Murphy Professor in the departments of mechanical engineering and civil and environmental engineering at Northwestern University. He was recognized for "seminal contributions to engineering research and education and for pioneering ultrasonic methods for the detection of cracks and corrosion in aircraft."

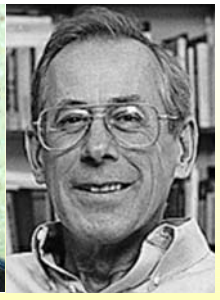
Gunn, Peebles, and Rees Receive 2005 Crafoord Prize

In addition to the Nobel Prizes, the Royal Swedish Academy of Science annually recognizes with its Crafoord Prize one of the fields of astronomy, biosciences, geophysics, and mathematics. This year's prize, astronomy, is being shared by **James E. Gunn**, **P. James E. Peebles**, and **Martin J. Rees** "for contributions towards understanding the large-scale structure of the universe." The academy writes, "Together these three scientists are responsible for most of the current picture of galaxy and structure formation in the universe."

The Academy praised Gunn for his theoretical contributions to the understanding of galaxy formation and of the properties of the gaseous medium between galaxies. He has also suggested important observational tests for the presence of dark matter in galaxies, and his later work has been closely related to observational projects. He has been "central in several instrumental projects for understanding the formation of galaxies," writes the academy—in particular, projects using the *Hubble Space Telescope* and the Sloan Digital Sky Survey. Gunn is the Eugene Higgins Professor of Astronomy at Princeton University.



Gunn



Peebles

Rees

Peebles, Albert Einstein Professor of Science, emeritus, and emeritus professor of physics at Princeton, was acknowledged for predicting, in the 1960s, "some of the most important properties of the fluctuations of the microwave background radiation" and for his detailed calculations of the "crucial epoch" when the universe evolved from being completely opaque to that radiation to being transparent. Later he developed the principal formalism for quantifying the observed clustering of galaxies. Peebles has been "one of the main proponents of the now most popular version of galaxy formation, the Cold Dark Matter theory, with the hierarchical evolution of the structure as its main characteristic."

Rees's work on galaxy formation includes the understanding of physical processes that determine the observed properties of galaxies. His recognition, with Simon White, of the importance of dark matter for the formation and properties of galaxies has stimulated extensive computer simulations of the large-scale structure. More recently he has developed "important ideas in re-

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