Dr. Joan Feynman

Dr. Joan Feynman has made important contributions to the study of solar wind particles and fields; sun-Earth relations; and magnetospheric physics. In particular, Feynman is known for developing an understanding of the origin of auroras. She is also known for creating a model that predicts the number of high-energy particles likely to hit a spacecraft over its lifetime, and for uncovering a method for predicting sun spot cycles. Dr. Feynman is the younger sister of physicist Richard Feynman.

Dr. Feynman earned her bachelor's degree from Oberlin College. She later attended Syracuse University, where she studied solid-state theory. During her graduate years, Dr. Feynman took a year off to live in Guatemala, where she studied the anthropology of the Maya peoples living there. Dr. Feynman eventually earned her doctorate in physics in 1958 and her thesis was on the "absorption of infrared radiation in crystals of diamond-type lattice structure." She also completed postdoctoral work at Columbia University.

Dr. Feynman spent the bulk of her career studying the interactions between the solar wind and the Earth's magnetosphere. While working at the NASA Ames Research Center in 1971, Feynman discovered that the periodic spouting of solar material known as a solar coronal mass ejection (CME) could be identified by the presence of helium in the solar wind. This was an important find because, although CME's were known at the time, they had until then been difficult to detect.

After her time at NASA Ames, Dr. Feynman moved on to a number of different research posts. These included positions with the High Altitude Observatory; the National Center for Atmospheric Research in Boulder, Colorado; the National Science Foundation in Washington, DC; and Boston College in Massachusetts. Finally in 1985, Dr. Feynman accepted a position at the Jet Propulsion Laboratory in Pasadena, California, where she remained until her retirement.

As part of her research, Dr. Feynman made a critical discovery about the nature and cause of auroras. Using data collected by Explorer 33, she demonstrated that the occurrence of auroras is a product of the interaction between the Earth's magnetosphere and the magnetic field of the solar wind.

In 1974, Feynman became the first woman to be elected as an officer of the American Geophysical Union. She also organized an AGU committee charged with advancing the fair treatment of women within the geophysics community. Dr. Feynman has been a longstanding member of the International Astronomical Union and was a member of a number of the IAU's subdivisions, including: Division E Sun and Heliosphere; Division G Stars and Stellar Physics; and Division E Commission 49 Interplanetary Plasma & Heliosphere. In 2002, Dr. Feynman was named as one of the Jet Propulsion Laboratory's elite senior research scientists and also in 2002, she was awarded NASA's distinguished Exceptional Achievement Medal.

Dr. Feynman retired from the Jet Propulsion Laboratory as a senior scientist in 2003. But she continued to work, publishing as recently as 2009 on the influence of solar activity on the climate of the first millennium. During her career, Dr. Feynman was an author or co-author of more than 100 scientific publications and also edited three scientific books.