Book on Richard Feynman nets honors for Arizona State professor

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"Quantum Man: Richard Feynman's Life in Science," ASU Foundation Professor and Director of the Origins Project Lawrence M. Krauss' recent book about a legendary and sometimes very public modern physicist, has been chosen as the 2011 Book of the Year by Physics World magazine in the UK.

Feynman is one of the most famous physicists of the second half of the 20th century, but he did much to bring science to the people, taking time to explain in simple terms some of its complexities and draw people into the exquisite world of science. One prime example of Feynman (who died in 1988) on the world stage was his explanation of the rigidity of space shuttle O-rings as a leading mechanical cause for the Challenger disaster in January of 1986.

Through his autobiographical memoirs and such public activities, Feynman became a well-known public figure, and as such has been the subject of numerous biographies. Krauss' biography stands out, however, as the first scientific biography of the eminent Nobel-prizewinning physicist, who revolutionized our understanding of the quantum universe.

"Richard Feynman was one of the most colorful physicists of the 20th century but, more importantly, he was one of the most beloved and important physicists as well," said Krauss, a theoretical physicist and cosmologist.

"I wanted to write a scientific book about Feynman because the public knows of him as a curious character, but what was clear was people did not know why he was revered by physicists," Krauss said. "I also wanted to use Feynman as a hook to talk about 20th and 21st century physics. From quantum mechanics, to quantum computing, from particle physics to gravitation, Feynman laid the groundwork for much of what is at the cusp of our theoretical explorations of the Universe today."

As a scientist, Feynman had an extraordinary ability to concentrate all of his energy on a single problem. He is known for his contributions to the development of path integral formulation of quantum mechanics, the theory of quantum electrodynamics (for which he shared the 1965 Nobel prize) and the physics of superfluidity of supercooled liquid helium. He also made many contributions in particle physics, including our understanding of the weak interaction responsible for the processes that power the Sun, and the strong interaction between quarks, which governs the makeup of protons and neutrons, and hence all the matter that makes up the world we see around us.

In addition to his theoretical physics work, Feynman was credited with pioneering the field of quantum computing and introducing the concept of nanotechnology. He also worked on the Manhattan Project and served on the panel investigating the Challenger disaster.

"Feynman is a role model to many physicists, and there have been a lot of books written about him, but Quantum Man stands out because it focuses on what Feynman was like as a scientist and thinker, and explains why he and his work remain important even 20 years after his death," said Margaret Harris, reviews and careers editor at Physics World.

"We particularly liked the fact that Krauss went back and re-read Feynman's original papers when he was researching the book, since this

gave him a perspective and an understanding of Feynman's work that a lot of biographers lack," she added. "Yet while the focus is firmly on Feynman's science, and not his larger-than-life personality, it's nevertheless a highly readable biography – we can imagine pretty much anyone with an interest in physics, from students to Nobel laureates, unwinding with it over the holidays."

Krauss' book has been particularly well received by the physics community, as well as the public, and longtime Feynman collaborator and eminent scientist Freeman Dyson, who reviewed Quantum Man in the New York Review of Books has said that Krauss' book is the first to really capture how Feynman thought about the world as a scientist.

"The Physics World selection of my book as Book of the Year is an unexpected honor," Krauss said. "I was particularly surprised in the selection because the prize has gone in recent years to British authors. I am also particularly pleased because I happen to be a fan of Physics World as a popular science magazine."

Krauss is the author of eight other books, including his upcoming book "A Universe from Nothing," which will appear in January of 2012. Other books include "Hiding in the Mirror: The Mysterious Allure of Extra Dimensions, from Plato to String Theory and Beyond," "The Physics of Star Trek," "Atom" (which won the American Institute of Physics Science Writing Award), and "Quintessence: The Mystery of the Missing Mass."

More information: "Quantum Man: Richard Feynman's Life in Science" is published by W.W. Norton & Co., Inc.

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