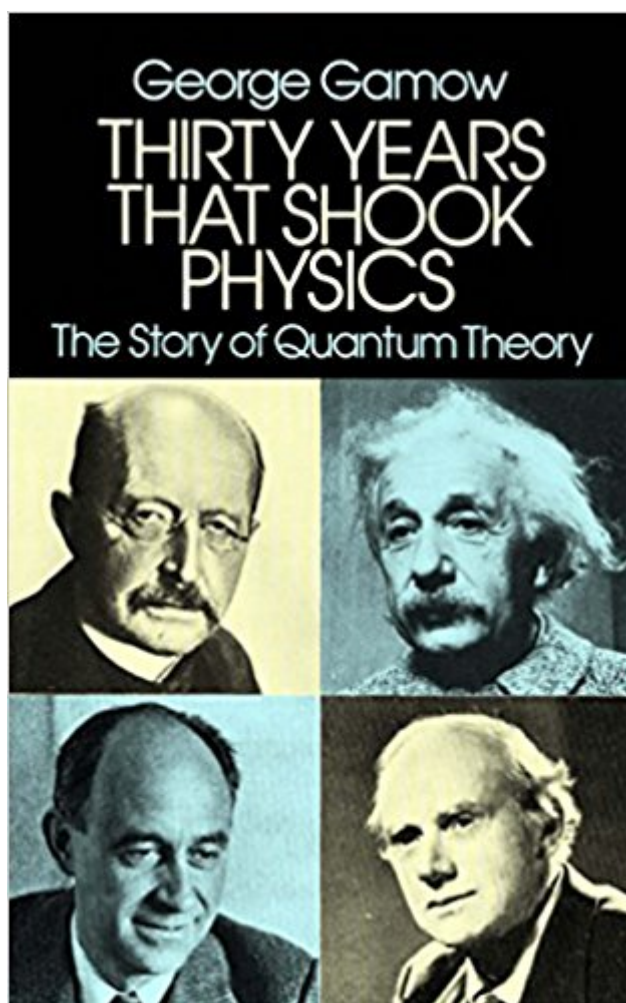


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Thirty Years That Shook Physics: The Story Of Quantum Theory



Synopsis

"Dr. Gamow, physicist and gifted writer, has sketched an intriguing portrait of the scientists and clashing ideas that made the quantum revolution." —Christian Science Monitor

In 1900, German physicist Max Planck postulated that light, or radiant energy, can exist only in the form of discrete packages or quanta. This profound insight, along with Einstein's equally momentous theories of relativity, completely revolutionized man's view of matter, energy, and the nature of physics itself. In this lucid layman's introduction to quantum theory, an eminent physicist and noted popularizer of science traces the development of quantum theory from the turn of the century to about 1930 — from Planck's seminal concept (still developing) to anti-particles, mesons, and Enrico Fermi's nuclear research. Gamow was not just a spectator at the theoretical breakthroughs which fundamentally altered our view of the universe, he was an active participant who made important contributions of his own. This "insider's" vantage point lends special validity to his careful, accessible explanations of Heisenberg's Uncertainty Principle, Niels Bohr's model of the atom, the pilot waves of Louis de Broglie and other path-breaking ideas. In addition, Gamow recounts a wealth of revealing personal anecdotes which give a warm human dimension to many giants of 20th-century physics. He ends the book with the Blegdamsvej Faust, a delightful play written in 1932 by Niels Bohr's students and colleagues to satirize the epochal developments that were revolutionizing physics. This celebrated play is available only in this volume. Written in a clear, lively style, and enhanced by 12 photographs (including candid shots of Rutherford, Bohr, Pauli, Heisenberg, Fermi, and others), *Thirty Years that Shook Physics* offers both scientists and laymen a highly readable introduction to the brilliant conceptions that helped unlock many secrets of energy and matter and laid the groundwork for future discoveries.

Book Information

File Size: 11487 KB

Print Length: 272 pages

Publisher: Dover Publications; Revised ed. edition (May 11, 2012)

Publication Date: April 13, 2012

Sold by: Amazon Digital Services LLC

Language: English

ASIN: B008TVLS3K

Text-to-Speech: Enabled

X-Ray: Not Enabled

Word Wise: Enabled

Lending: Enabled

Screen Reader: Supported

Enhanced Typesetting: Enabled

Best Sellers Rank: #343,633 Paid in Kindle Store (See Top 100 Paid in Kindle Store) #33

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Customer Reviews

Thirty years that shook physics by G. Gamow gives a very good account of the happenings in physics circle from 1900 to 1930. These thirty years are considered very important in the history of Quantum physics. The author, himself a great scientist, gives in detail the part played by other great scientists Max Planck, N. Bohr, W. Pauli, De Broglie, W. Heisenberg, Dirac, Fermi and Yukawa in the development of quantum physics. If you want to learn about quantum physics, this book will help you learn the basics about it, and at times it is funny too when it describes some of the incidents related to these scientists. I had a good laugh when reading about Pauli's very funny third principle of things breaking down in laboratories in the presence of theoretical physicists. When a scientist's experiment went wrong, he wrote a letter to Pauli. Pauli wrote back that he was in the train at that time and the train had a brief halt at the station in the city where the experiment was being conducted, suggesting the failure of experiment due to his presence in the city station at that time. Really good humor!

Excellent history of the period, with a personal experience touch to it. Some of the translation is a bit awkward, so that I had to re-read sentences a few times to determine what I thought he was trying to say. The translations make for some interesting analogies, and I really liked the first-person description of events. I'm reading "Mr. Tompkins in Paperback" now.

This is a "fun book" written by an author who lived during a fascinating time in physics. Gamow was a preeminent physicist himself, and knew most of his contemporaries. His sketches are priceless and his writing style is engaging. A highly recommended book!

I first read George Gamow in the 1950's when I was a college undergraduate. I was a philosophy

student who was trying to take advanced physics courses. My grades rose from C's to B's, and I attribute it all to Gamow's clarity. I recently bought new copies of his books to provide background for an informal presentation I may have to make. I have always been grateful for the power of Gamow's pedagogy.

This is probably the best introduction to Quantum Physics that I have ever seen. Gamow had a knack for explaining science concepts in accessible and engaging ways that probably surpasses Richard Feynman (who put considerable effort into explaining his concepts to beginners). In particular, he knows when and where to pull back from the mathematical trees to illustrate the more conceptual forest. Also, his hand drawn diagrams and graphs are just downright quaint.

The book offers brief (except the Bohr chapter) introductions to quantum theory principles. It goes from Planck to Dirac with some notes on particle physics. These last chapters are a bit dated though, missing the more recent QED, QCD, electroweak theory, and standard model. Plus misses more recent quantum mechanics like entanglement and the EPR argument which lead to it, plus there is no discussion of alternative interpretations. In Search of Schrödinger's Cat, or Quantum Realities is a better start I think.

George Gamow was one of the scientists in the great era of quantum theory. He is able to bring readers in the road to discovering the quantum theory. The book also provides the views from different great scientists and what they were debating in the road to nurture the theory. It is worth for anyone, who is interested in Physics, to read.

Very good story on the development of quantum theory and plenty of great personal anecdotes from the author who met and spoke with many of the great figures of early 20th century physics.

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