



# The Discoveries: Great Breakthroughs in 20th-Century Science, Including the Original Papers

*By Alan Lightman*

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In this captivating and lucid book, novelist and science writer Alan Lightman chronicles twenty-four great discoveries of twentieth-century science--everything from the theory of relativity to mapping the structure of DNA. These discoveries radically changed our notions of the world and our place in it. Here are Einstein, Fleming, Bohr, McClintock, Pauling, Watson and Crick, Heisenberg and many others. With remarkable insight, Lightman charts the intellectual and emotional landscape of the time, portrays the human drama of discovery, and explains the significance and impact of the work. Finally he includes a fascinating and unique guided tour through the original papers in which the discoveries were revealed. Here is science writing at its best--beautiful, lyrical and completely accessible. It brings the process of discovery to life before our very eyes.

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### Editorial Review

From Publishers Weekly

In this enlightening collection, novelist and science writer Lightman (*Einstein's Dreams*) has assembled the original works announcing 25 of the world's pioneering scientific breakthroughs, coupling them with original essays to create a meditation on the "exhilaration of discovery." The lineup is a who's who of 20th-century science—Einstein, Planck, Fleming—ranging from quantum physics to astronomy, medicine, genetics and chemistry. Lightman is at his best when humanizing the scientists behind the world's major discoveries; he offers a stunning recollection from Caltech in the 1970s, when he was a graduate student, of Richard Feynman virulently attacking a world-weary Werner Heisenberg, author of the uncertainty principle, for a terrible lecture and, implicitly, for having worked on an atom bomb for the Nazis. Unfortunately, the heart of the collection, the landmark papers themselves, will prove to be stultifying and unintelligible for readers not well versed in science. Still, Lightman's elegant accompanying narratives are strong enough to carry the book. In an age when science is expanding at a faster clip than ever before, from supercomputing to cloning, this collection is a well-timed reminder of the humanity that surrounds and indeed drives scientific discovery. B&w photos.

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From [Booklist](#)

**\*Starred Review\*** No one serious about literature would neglect Shakespeare and rely solely on his interpreters. But scientists rarely read what physicist and writer Lightman calls "original discovery papers." Believing that "the first reports of the great discoveries of science are works of art," Lightman has selected 25 twentieth-century "breakthrough" papers in fields ranging from quantum physics to molecular biology, medicine, and cosmology that essentially define the world as we know it. Writing with his signature clarity, warmth, and sense of wonder, Lightman introduces each landmark work with a crystalline essay elucidating the personality and life of each scientist and the significance of that scientist's paradigm-altering discovery. Lightman is especially sensitive to the suffering of Jewish German scientists under the Nazis and of women scientists in the days of institutionalized misogyny, and he writes with remarkable insight about the psychological effect of such counterintuitive findings as Werner Heisenberg's Uncertainty Principle. Fluent in every field he explicates, Lightman offers unprecedented commentary on each paper's style of reasoning. And how extraordinary to hold a single volume containing papers by Albert Einstein, Niels Bohr, Henrietta Leavitt, Linus Pauling, Edwin Hubble, and Barbara McClintock. This brilliantly conceived and assembled treasury belongs in every library. *Donna Seaman*

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Review

"Engaging. . . . Masterly. . . . Intimate. . . . [Lightman's] enjoyment of the material shines through." —*The Washington Post*

"Lightman's map of 20th century science beautifully conveys the human drama of discovery." —*American Scientist*

"An intriguing mix of the famous and unfamiliar." —*The Boston Globe*

"Lightman's introductions to the discoveries are, collectively, an outstanding primer on the development of science in the twentieth century." —*The Nation*

## **Users Review**

### **From reader reviews:**

#### **Anthony Youngblood:**

The guide with title The Discoveries: Great Breakthroughs in 20th-Century Science, Including the Original Papers contains a lot of information that you can understand it. You can get a lot of profit after read this book. This kind of book exist new information the information that exist in this guide represented the condition of the world currently. That is important to yo7u to be aware of how the improvement of the world. This book will bring you throughout new era of the globalization. You can read the e-book on your smart phone, so you can read that anywhere you want.

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#### **Nancy Jackson:**

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