Deep Simplicity: Bringing Order To Chaos And Complexity
Over the past two decades, no field of scientific inquiry has had a more striking impact across a wide array of disciplines—"from biology to physics, computing to meteorology—than that known as chaos and complexity, the study of complex systems. Now astrophysicist John Gribbin draws on his expertise to explore, in prose that communicates not only the wonder but the substance of cutting-edge science, the principles behind chaos and complexity. He reveals the remarkable ways these two revolutionary theories have been applied over the last twenty years to explain all sorts of phenomena—"from weather patterns to mass extinctions. Grounding these paradigm-shifting ideas in their historical context, Gribbin also traces their development from Newton to Darwin to Lorenz, Prigogine, and Lovelock, demonstrating how—far from overturning all that has gone before—chaos and complexity are the triumphant extensions of simple scientific laws. Ultimately, Gribbin illustrates how chaos and complexity permeate the universe on every scale, governing the evolution of life and galaxies alike.

Book Information

Hardcover: 304 pages
Publisher: Random House; Later Printing Used edition (April 5, 2005)
Language: English
ISBN-10: 140006256X
Product Dimensions: 5.7 x 0.9 x 8.6 inches
Shipping Weight: 13.6 ounces (View shipping rates and policies)
Average Customer Review: 4.5 out of 5 stars—See all reviews (28 customer reviews)
Best Sellers Rank: #86,687 in Books (See Top 100 in Books)   #17 in Books > Science & Math > Physics > Chaos Theory   #442 in Books > Science & Math > History & Philosophy

Customer Reviews

This book, by astrophysicist John Gribbin, gives us insight into the concepts of "chaos" and "complexity." Chaos occurs when a small change in the starting conditions of a process produces a big change in the outcome of that process. A complex system is one that is chaotic, and in which the way the system develops feeds back on itself to change the way it is developing. Is there an order or a simplicity that underlies chaos and complexity? According to Gribbin, there is. He states, "the great insight is that chaos and complexity follow simple laws—essentially the same simple laws discovered by Isaac Newton more than three hundred years ago." Gribbin goes on to make this
startling statement: "Chaos begets complexity, and complexity begets life." So what is the theme of this book? Answer: "It is the simplicity that underpins complexity, and thereby makes life possible, that is the theme of this book." The first three chapters tell us about Chaos. They are titled as follows: (1) Order (or simplicity) out of chaos (2) The return of chaos (3) Chaos out of order The next chapter introduces another important concept. It's titled: (4) From chaos to complexity The next two chapters introduce and discuss the most complex system of all. They're entitled: (5) Earthquakes, (mass) extinctions, and emergence (of life) (6) The facts of life The final chapter looks into the biggest question facing science today: "Is there life beyond Earth, elsewhere in our Solar System, or out in the Universe at large?"