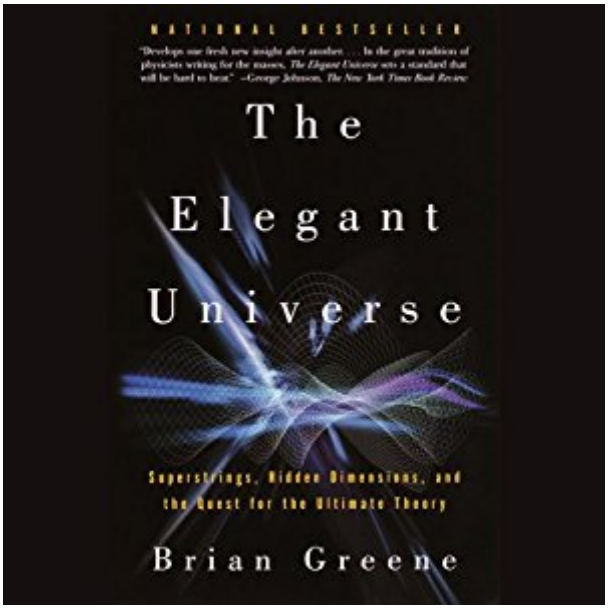
The Elegant Universe: Superstrings, Hidden Dimensions, And The Quest For The Ultimate Theory



Synopsis

Physicists and mathematicians throughout the world are working on one of the most ambitious theories ever proposed: superstring theory. String theory, as it is often called, is the key to the Unified Field Theory that eluded Einstein for more than 30 years. Finally, the century-old antagonism between the large and the small - General Relativity and Quantum Theory - is resolved. String theory proclaims that all of the wondrous happenings in the universe, from the frantic dancing of of subatomic quarks to the swirling of galaxies, are reflections of one grand physical principle and manifestations of one single entity: microscopically tiny vibrating loops of energy, a billionth of a billionth the size of an atom. In this work, Brian Greene relates the scientific story and the human struggle behind 20th-century physics' search for a theory of everything. Through the use of metaphor and analogy, this work makes some of the most sophisticated concepts accessible, aiming to bring the reader closer to an understanding of how the universe works. --This text refers to an out of print or unavailable edition of this title.

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Customer Reviews

Before I read this book, I didn't know the first thing about string theory, general relativity or quantum mechanics. I believe people like me were the author's target audience; that is, people who are profoundly interested in the mysterious physics of the universe, but lack the scientific or mathematical background to understand them in their raw form. This book certainly shouldn't be seen as anything other than an introduction for those of us outside the field of physics.Each chapter

in this book lays down the foundation for the next chapter. Greene manages to group together scattered discoveries from the past century or so according to their relevance to the topic at hand, and it feels very natural. Every complex concept is explained in somewhat technical detail and then followed up immediately by a clever (and occasionally humorous) analogy. The key points are always restated and rephrased to make absolutely sure the reader is on the same page with the author. This method really does wonders for nailing important concepts to your head, which turns out to be absolutely essential as the book progresses and new ideas are stacked atop the old.This book, overall, is interesting. There are some extraordinarily intriguing chapters that will have your mind racing for at least a couple days, trying to piece together the chapter’s implications, and then there are a couple dull chapters that almost feel like a chore to get through. However, the dull chapters, which seem to be flooded with basic mathematical and technical details, are necessary to understand the big picture. Greene only presents us with the details we need to understand, nothing more, and I honestly can’t think of a way he could have made these dull chapters exciting.If you are a curious physics newbie, or only know bits and pieces about the basic concepts of string theory, special and general relativity, quantum mechanics, black holes, the big bang, or hidden dimensions, this book is certainly for you! If you are already knowledgeable in these subjects and seek the deepest technical and mathematical information about them, I’m guessing you will not find what you are looking for in this book.

In this book on eleven-dimensional space-time, Brian Greene proves himself to be truly exceptional in at least three of those dimensions: by his thorough comprehension of the origins and direction of theoretical physics up through the emergence of superstring theory, by his monumental contributions to that theory in identifying its components and extending its reach, and, thirdly, in explaining this subject in a way that allows the "layman" to gain an appreciation and intuitive understanding of it.By way of explaining the use of the term "layman," let me point out that this book is not light reading. I don’t believe it can be read by those without at least some exposure to college level physics. I am a former high school physics teacher, and I had to really stretch to understand Dr. Greene’s explanations. Nevertheless, considering the mathematical and physical complexity of the subject matter, Dr. Greene has done a splendid and remarkable job of explaining the subject at a conceptual, nonmathematical level. Anyone with a physics background through the level of an introductory course in modern physics will find Dr. Greene’s treatise accessible. It brings the reader closer to the current state of research in the rapidly moving field of superstring theory than books written even two years ago. The book requires work, but it was a labor of love. This book is

beautifully and artfully written and was a joy to read. I recommend it highly to anyone with the modest physics background described above who enjoys exploring theoretical physics and cosmology at a level approximating that of Scientific American.

Assumes no prior knowledge of physics as such. Has an excellent introduction to relativity and quantum theory. Actually, I haven't seen a better introduction to relativity or quantum theory elsewhere. The book then moves on to string theory (which is the main theme of the book). An excellent introduction to string theory, I must say. The book is very easy to follow and can very well serve as a layman's introduction to high-end physics. For the more advanced readers, the author provides endnotes which elaborate the subject matter in a mathematical/physical perspective. People from all walks of life will enjoy this book

I recommend this book to anyone who is curious enough to wonder about the origins of matter, energy, and the universe itself. Mr. Greene makes it very easy for the lay readers to grasp the basic understanding of some out of this world concepts, such as extra dimensions and vibrating strings. I am a professional engineer with years of training in math and physics, however, I enjoyed the non-technical way Professor Greene has written this book. After reading this book I had a much better understanding of quantum mechanics, relativity, and the string theory, and enjoyed reading the whole book from beginning to the end.Some of the reviewers have faulted Professor Greene for communicating his ideas without using complicated mathematics. To me, this is one of strengths of this and other similar books that are written for the lay people. Those readers who are mathematical geniuses can find plenty of other resources to suit their taste. Others think that it is inappropriate to write about incomplete theories that cannot be experimentally verified at the present time. This is absurd. This is what the progress of science is all about. I thank Brian Greene for sharing his ideas so clearly with the rest of us. I am going to talk to my young daughter about this book in the hopes of inspiring her to someday join the minds who want to unlock the mysteries of our universe.

Universe) Mammals Who Morph: The Universe Tells Our Evolution Story: Book 3 (The Universe Series) From Lava to Life: The Universe Tells Our Earth Story: Book 2 (The Universe Series) First Meetings: In Ender's Universe (Other Tales from the Ender Universe) Hot Dog's Quiz Quest (Skylanders Universe) Quest for Gem Magic (Steven Universe) Algonquin Spring: An Algonquin Quest Novel (An Algonguin Quest Novel) I Am Algonquin: An Algonquin Quest Novel (An Algonguin Quest Novel) Elephant Quest Elephant Quest (Adventures Around the World) Python Graphics for Games 3: Working in 3 Dimensions: Object Creation and Animation with OpenGL and Blender (Volume 3) Design for 3D Printing: Scanning, Creating, Editing, Remixing, and Making in Three Dimensions SAS Data Analytic Development: Dimensions of Software Quality (Wiley and SAS Business Series) Citizen-officers: The Union and Confederate Volunteer Junior Officer Corps in the American Civil War (Conflicting Worlds: New Dimensions of the American Civil War)