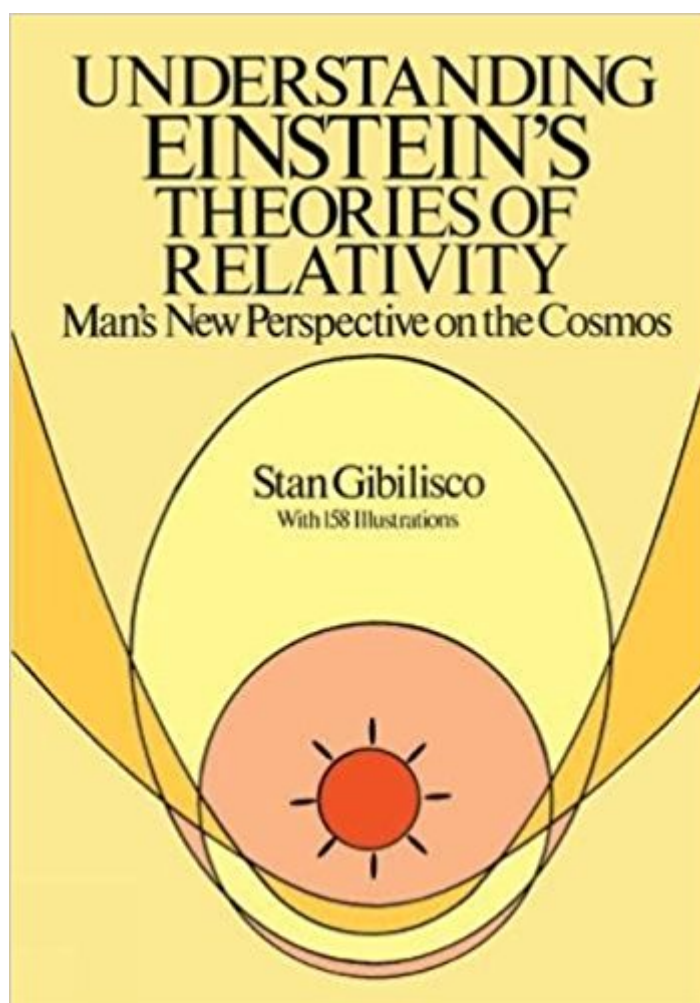


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Understanding Einstein's Theories Of Relativity: Man's New Perspective On The Cosmos



Synopsis

"The style is very clear and concise, and the treatment is authoritative throughout." —Choice

Relativity remains a topic of crucial interest for scientists grappling with its implications for physics, astronomy, cosmology, and other disciplines. Laymen, too, are fascinated by relativity theory, which overturned the classical order of Newtonian physics and postulated ideas about space and time that often seem to contradict common sense. The present work is a very clear, concise, and authoritative exposition of both the special and general theories of relativity. Intended for nonscientific readers with a knowledge of high school math, the book offers illuminating coverage of such topics as the speed of light, simultaneity, time distortion of space and mass, journeys to the stars, dimension and hyperspace, the theory of general relativity, anomalies in space, and the structure and evolution of the universe. Readers with an inquisitive bent for cosmic affairs will enjoy this mind-stretching journey into the mysteries and majesty of the physical universe, where they'll share the author's explanations and speculations about why the speed of light is the speed of time, whether it may be possible to travel backward in time, how black holes are formed, how it is possible that space is curved, and much more. For anyone curious about the nature of the universe and how relativity theory continues to help scientists unlock its secrets, this accessible popular treatment is an invaluable companion and guide.

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Customer Reviews

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physics, astronomy, cosmology, and other disciplines. Laymen, too, are fascinated by relativity theory, which overturned the classical order of Newtonian physics and postulated ideas about space and time that often seem to contradict common sense. The present work is a very clear, concise, and authoritative exposition of both the special and general theories of relativity. Intended for nonscientific readers with a knowledge of high school math, the book offers illuminating coverage of such topics as the speed of light, simultaneity, time distortion of space and mass, journeys to the stars, dimension and hyperspace, the theory of general relativity, anomalies in space, and the structure and evolution of the universe. Readers with an inquisitive bent for cosmic affairs will enjoy this mind-stretching journey into the mysteries and majesty of the physical universe, where they'll share the author's explanations and speculations about why the speed of light is the speed of time, whether it may be possible to travel backward in time, how black holes are formed, how it is possible that space is curved, and much more. For anyone curious about the nature of the universe and how relativity theory continues to help scientists unlock its secrets, this accessible popular treatment is an invaluable companion and guide.

OK, I admit it - I violated my own rule and bought this book without checking the reviews first. It was available locally at a good discount, looked interesting (based largely on the figures and a quick skimming of some of the text), and being a Dover reprint I was willing to overlook the fact that nowhere in the book was there anything about the qualification of the author to write a book on Relativity. Dover generally reprints classic scientific texts - written by those who are eminently qualified in the subject matter of the book. Unfortunately, in the case of this book Dover let me down. According to the Web information that I was able to find, the author is a professional writer, perhaps an electrical engineer - some of his previous books have been on that subject. He does not appear to be a theoretical physicist, or perhaps even a physicist of any kind and his grasp of Relativity Theory appears to be, putting it charitably, unique at best. I have previously read 4 of the 9 books listed in the suggested readings and I have also read most of the general treatments of Special Relativity, so I have a general familiarity with the subject. On this basis I cannot recommend this book. The author has tried to present a general treatment of Relativity and its implications for cosmology and space travel in a way that he found understandable. Unfortunately, many of his interpretations are just plain wrong, leading me to believe that he does not understand the basic ideas of special relativity. For instance, Gibilisco states (on p49) - "Time distortions may be caused by the acceleration that occurs because of "pushing" on such a space ship and it can also be caused by gravitational fields." The part about the gravitational fields is true when gravity or

accelerations are present (as is shown in General Relativity), but time distortion, as considered in Special Relativity (the context in which this statement was made), occurs even without considering gravity or acceleration. Special Relativity does not even apply when accelerations are present. In my opinion, this is just his way of understanding the phenomenon, but it is completely incorrect. (I guess the use of the word "may" gets Gibilisco somewhat off the hook, but if you use this answer on an exam you may find that your teacher is not so charitable.) If you actually want to understand what Relativity Theory is all about I recommend Martin Gardner's "Relativity Simply Explained" or Einstein's "Relativity". For those wanting a bit more detailed, but still a general treatment, I recommend Feynman's "Six Not So Easy Pieces" and Born's "Einstein's Theory of Relativity" (which is a little more complex). There are also numerous college textbooks on Special Relativity, many of which are introductory in nature. Special Relativity takes up only the first third of the book (about 70 pages). There are also sections on space travel, cosmology and the geometry of multidimensional space that are either out-of-date or covered better in other books. Even his basic physics terminology is confused and out of date. The inward acceleration associated with rotational motion is centripetal acceleration and the corresponding inward force is the centripetal force. Unfortunately, he incorrectly uses the terms centrifugal acceleration and centrifugal force for these inward accelerations and forces. However, in the same paragraph he correctly refers to the opposing outward force as the centrifugal force. (To be fair, at the time this book was written there was some confusion in texts over the distinction between these terms, but this is now settled and there are physics professors who will now take off points for this error.) Spend too much time with this book and you will become as confused as the author, and may even fail physics. I got more out of the chapter on the General Theory of Relativity than from the rest of the book. The arguments are entirely geometric and are interesting. However, being less conversant with the General Theory, I do not know if it is riddled with the same kind of errors as the rest of the book, so I must assume some level of caution when I accept what I am reading. The cosmology sections are OK for the mid 80's when this book was written, but this field has advanced so fast that the material provided is largely obsolete. All in all, I cannot think of audience to whom I would recommend this book and for that reason I can only give it one star. Avoid this book. You can more profitably spend your time and money elsewhere - for instance with the books mentioned earlier in this review and with modern books based on the most recent observations.

jimmy love it , it's no delayed. I will recommend it to my friend. This is a great bread product! It slices through my homemade bread with bees. It is nice and big, as well as solidly weighted. i will come

next time .

I have owned this book since 1984, when I purchased the original edition from TAB Books. I found the approach unique, apparently written from a mathematician's point of view. But I was led to wonder about the accuracy of some of the material in the book, particularly of thought experiments that cannot be done in real life and which therefore cannot be positively verified or denied experimentally. For example, who is going to put clocks all over the solar system and then go to every planet to check their readings? But then, other books do the same thing, for example, asking the reader to imagine riding on a train travelling at eighty percent of the speed of light. After looking at various mentions of this title around the Web (as a phrase in Google advanced search), I have found mostly positive comments, including one from a mathematician (!) in Alabama and another from an educational association in Arizona. These experts have recommended this book as good reading for their students. One fellow dismissed the book because he turned to a page and found some mention of UFOs, but confessed that he hadn't actually read the book yet. Gibilisco's approach differs rather dramatically from most other relativity books because it is neither highfalutin nor silly. The style is, for the most part, clear. I think the explanations of simultaneity are a little hard to understand and could be misleading to some readers. Gibilisco could do a better job of explaining the relativity of simultaneity among objects in relative motion. It would be nice to have more discussion about paradoxes associated with Special Relativity. An updated edition could clarify some of these issues and also address the question, "Can anything travel faster than the speed of light in free space?"

There are a lot of books out there that try to help non-scientists understand Einstein's Theories of Relativity, and I've read a bunch of them. I've also devoted a lot of time to the study of Relativity, in all it's mathematical splendor, and believe I've reached a level of a competent 1st year Physics grad student. With regard to this book: Mr. Gibilisco explains things better than he understands them, and this book was obviously not proofed by a competent Physicist. So... read it at your own risk. If you aren't going to go further in this subject, his errors probably won't hurt anything, but if you are still deciding which book to buy... keep on looking.

This is a rather short but good read for anyone who is interested in learning more about the theories of Albert Einstein. This is also a good introduction for kids or teenagers to learn more on this subject.

This book is sadly misguided. The author not only does not understand relativity, but actually promulgates common misunderstandings as fact. For example: he says that even mathematically defined points, such as the point of intersection of moving straight lines, cannot exceed the speed of light. They can. Even worse, he says that there is no such thing as simultaneity in a distributed frame of reference. There is. He says the lack of simultaneity is due to the propagation delay of light. It is not. All these things are covered in any introductory text on Special Relativity. Reading this book will only mislead you. It was clearly never reviewed by a relativity physicist. It's sad that it was ever published.

My sons both used this book to help them understand relativity, and they found it easy to read. Chapter 2 (dealing with clocks and simultaneity) is a little difficult, but you can understand it if you read it twice! The rest of the book is fun and informative. Maybe it will motivate my oldest son to become an astronomer and work in the neutrino observatory they hope to build in the old gold mine!

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