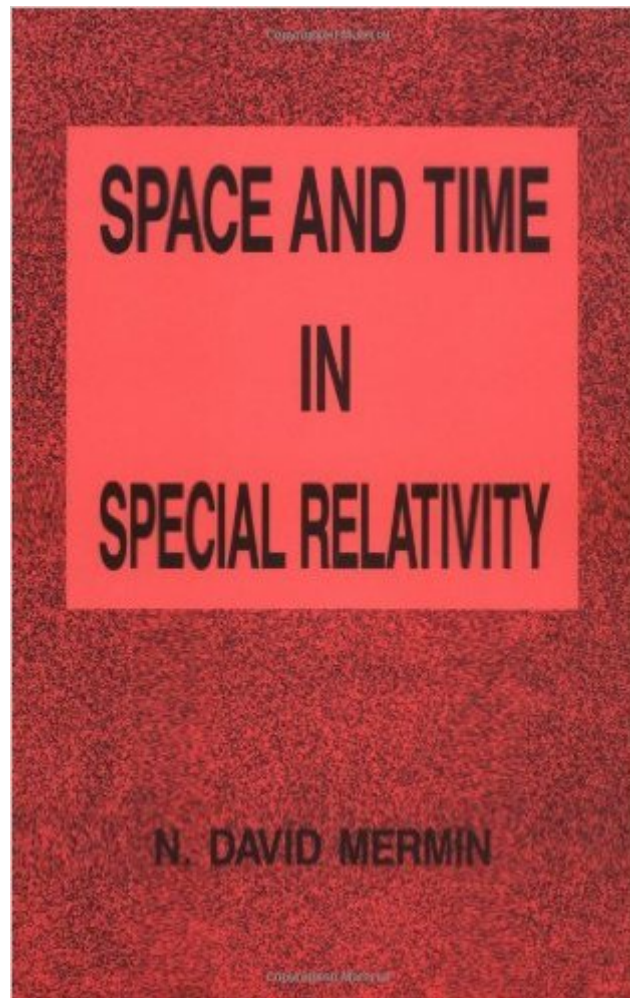


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# Space And Time In Special Relativity



## Synopsis

A classic of elementary relativistic pedagogy! This straight- forward book introduces readers to the conceptually tricky subject of relativity in understandable terms. The writing is crisp and clearly written by someone who is aware of the conceptual difficulties that nonscientists have in coming to grips with relativity.

## Book Information

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## Customer Reviews

This book was astounding. I had my share of knowledge in physics: Newtonian Mechanics, Electrodynamics and Magnetism, Optics, etc. This book took my preconceived ideas of how the Universe worked and all but threw them out the window. Mermin's description of why the old physical model is inadequate was very descriptive and informative - even for someone with a highschool physics background. Numerous examples and analogies bring to understanding many difficult and abstract concepts. As for the skeptic . . . well, he deals with them in the later part of the book (I was one of them). This book reads like a Science Fiction novel. Yet the topics presented could not be more real. We have Einstein to thank for the Principles and Theories of Special Relativity, and Mermin to thank for communicating them to the general population. I recommend this book to everybody; physicist or not. You cannot fool yourself into thinking you have an understanding of the universe until you read and comprehend the topics covered in this book. Enjoy!

I'm writing this review based on my impressions of this book when I read it 9 years ago as an undergraduate physics major at Berkeley. We used it in an honors sophomore-level physics class for

physics majors. I'm know a physics grad-student at UCSB. I want to dissavow the impression you might have that this is just a light-weight, pop-science book. This book is very axiomatic and it really tries to "prove" relativity to the reader. The beginning chapters will motivate the postulates of special relativity (eg: "the speed of light is the same in all reference-frames"), and you will learn how to DERIVE the Lorentz transformations from them. (...which is the major thrust of the book. On a side note: topics like why  $E=mc^2$  aren't discussed until the end.) This is why we used it in our class. The students taking the regular Berkeley physics class only memorized the Lorentz transformations and plugged them in blindly. I felt we learned a great deal more than they did. I think this book is billed as a descriptive introduction to relativity for non-specialists because it's clear and easy to read (although perhaps a bit verbose), and because doesn't use any fancy math, just basic geometry (right-triangles, the pythagorean theorem). This doesn't mean it should be shuned by specialists-to-be. This was my first introduction to relativity and at the time, I felt completely satisfied with my understanding of the material after reading it.

For anyone who wants to understand special relativity, even those who may not be particularly adept at physics or higher math, this is the book. I spent months searching for a clear resolution of the "twin paradox" (aka, "clock paradox") without success. This is the *\*only\** book I've ever found that accomplishes it, no other physics text I could find (and I examined 23 of them at the UCSD S&E library) provided a comprehensible explanation. This is nothing short of a spectacular piece of work. There is no way to go wrong with this book if you have any interest in the topic at all. I'm confident that even well-experienced professional physicists could find a good many new and useful insights in it. And the best part is, this book is easily accessible by practically anyone having even entry level scientific awareness. It's a genuine classic.

An excellent treatment of a very non-intuitive subject. Loved the mini-play in which each observer considers the other's measurements as flawed while their own perfectly accurate. Surprising how easily Mermin gets to the results of special relativity without getting bogged down in the math usually used.

And that includes Epstein's "Relativity Visualized" and Wolfson's "Simply Einstein". My impression is that Mermin is truly intelligent and a good teacher. I found some of the other books talked down to me or spent time explaining how Michelson (or was it Morley) was abused as a child instead of sticking to the subject. I intend to buy Mermin's other book on the subject "It's About Time". I highly

recommend this book to anyone who has a reasonably technical mind and wants to get a firm grasp on this subject.

have to thank Dr. Mermin for being able to interpret and discuss such, in a sense, complex matters effectively and efficiently; great for beginners, like myself, to have a philosophical approach. some of the problems presented are, in fact, not easy.

My "Modern Physics" prof suggested this book to me after we had a couple of arguments in class (1-1). I'd had some SR as an UG engineer, but never really went beyond the twin paradox. I'd also independently studied A P French and worked through all the problems. Mermin's book was the first that gave me the ability to work through all the apparent paradoxes by myself, and to be able to comprehend SR in the sense that I could then verbally recount the resolutions without resort to notes etc. This book allows you to conceptually answer every SR problem without recourse to the LTs. It allows one the ability to "see" Minkowski ST in the same way we see 3D Euclidean space. After a PhD in and a reasonable understanding of General relativity/ quantum mechanics, I would still appreciate a "Mermin" for GR and QM. 20 plus years since reading it, I am considering Mermin's SR as the basis of a course in "Understanding SR", for adults and Middle school students.

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