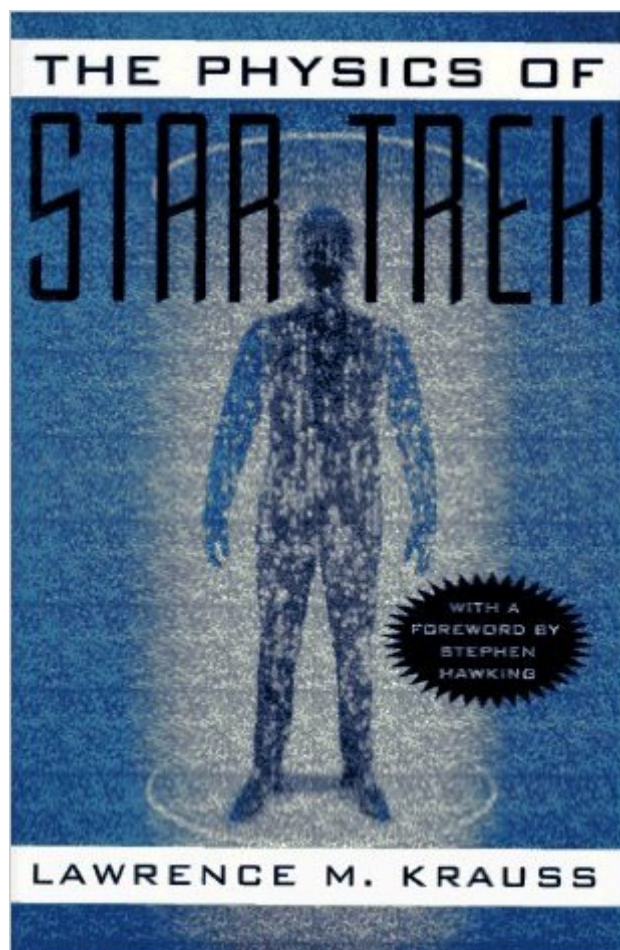


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# The Physics Of Star Trek



## Synopsis

Today's science fiction is often tomorrow's science fact. The physics that underlies Star Trek is surely worth investigating. To confine our attention to terrestrial matters would be to limit the human spirit.

## Book Information

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## Customer Reviews

Did you know that many of the world's best physicists like to watch Star Trek, and then discuss what's right and wrong about the science displayed? Well, apparently they do. Drawing on contacts within the scientific community and on-line bulletin boards, Professor Krauss has written a sprightly review of what physicists think about when they see these shows. He translates these observations into simple concepts that the average reader should be able to follow, assuming an interest in Star Trek or science. As a non-scientist, I had always assumed that 70 percent of the "science" on a Star Trek show was just so much imagination. The reason I thought that was because I could see so many obvious errors (seeing phaser light in space, hearing sounds in space, effects occurring too soon on the space ship, holograms acting like they were made of matter, and permanent worm holes) based on what little I knew. Was I ever surprised to find out that these obvious errors were the bulk of all the errors in the shows! Apparently the writers have been working closely with scientifically knowledgeable people to keep what is covered reasonably possible . . . along with some poetic license. The physics of cosmology are fascinating, but I can quickly get lost in matching quantum mechanics to general relativity and so forth. I was also pleasantly surprised to see that I could follow the arguments much better when they used a familiar Star Trek episode as a reference.

Like the child who learns math when it involves counting his or her own money, I can learn physics more easily when it relates to Star Trek. Very nice! The book takes a look at the common Star Trek features like warp drive, transporters, replicators, phasers, sensors, subspace communications, and tractor beams.

I never took biology or chemistry let alone physics in school, so I am easily intimidated by big words with Latin prefixes and Greek suffixes that explain the mysteries of the real world let alone the Star Trek universe. Lawrence M. Krauss, Ambrose Swasey Professor of Physics and Professor of Astronomy and Chairman of the Department of Physics at Case Western Reserve University might be making stuff up the same way as Gene Roddenberry and his heirs, but he sure makes a compelling case that is easily understood even by scientific illiterates such as myself. He certainly has the credentials, even if he spells his first name funny. This book takes nitpicking about Star Trek to a whole new level, and I mean that in the best sense of the world. "The Physics of Star Trek" is divided into three sections. The first, "A Cosmic Poker Game," explores the physics of inertial dampers and tractor beams as they apply to warp speed, deflector shields, wormholes and time travel (The short answer is "No, but...", which is where it gets fascinating). The second, "Matter Matter Everywhere," covers transporter beams, warp drives, dilithium crystals, matter-antimatter engines, and the holodeck (see above short answer). The third, "The Invisible Universe, or Things That Go Bump in the Night," looks at the great unknown of the future where we may (or may not) encounter alien beings, multiple dimensions and other fun things from the Star Trek universe. There are nice diagrams to help the explanations along, filling in for Krauss' classroom chalkboard. Krauss also proves he is not alone in his major league nitpicking as he includes a Top Ten Physics Bloopers and Blunders from Star Trek that were selected by Noble Prize-winning physicists and other Trekkers.

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