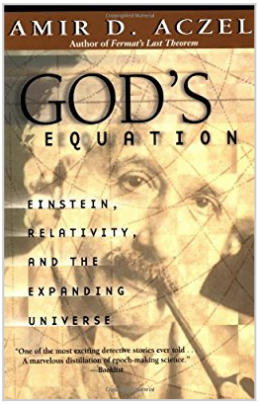

God's Equation: Einstein, Relativity, and the Expanding Universe

By Amir D. Aczel

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Are we on the verge of solving the riddle of creation using Einstein's "greatest blunder"?

In a work that is at once lucid, exhilarating and profound, renowned mathematician Dr. Amir Aczel, critically acclaimed author of **Fermat's Last Theorem**, takes us into the heart of science's greatest mystery.

In January 1998, astronomers found evidence that the cosmos is expanding at an ever-increasing rate. The way we perceive the universe was changed forever. The most compelling theory cosmologists could find to explain this phenomenon was Einstein's cosmological constant, a theory he conceived--and rejected---over eighty years ago.

Drawing on newly discovered letters of Einstein--many translated here for the first time--years of research, and interviews with prominent mathematicians, cosmologists, physicists, and astronomers, Aczel takes us on a fascinating journey into "the strange geometry of space-time," and into the mind of a genius. Here the unthinkable becomes real: an infinite, ever-expanding, ever-accelerating universe whose only absolute is the speed of light.

Awesome in scope, thrilling in detail, **God's Equation** is storytelling at its finest.

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Editorial Review

Amazon.com Review
Who would have thought a mathematical constant would make such an engaging character? *God's Equation: Einstein, Relativity, and the Expanding Universe*, mathematician Amir Aczel's tale of the search for a scientific explanation of the universe, features the cosmological constant in a role as complex as Einstein's. The great genius referred to it as his "greatest blunder," but recent events in the world of astrophysics have brought the prodigal term back into the fold as an important part of his field equation. Aczel is a powerful storyteller, and makes no secret of his admiration for Einstein; much of the book revolves around his conquest of general relativity. Integrating relativity with gravitation was no easy task (even for Einstein), but the author deftly steers the reader away from the sticky stuff and focuses attention on concepts of importance.

Aczel shows Einstein's aesthetic troubles with the cosmological constant, which preceded theoretical and experimental problems leading to its abandonment. The universe was caught in the act of expansion by Edwin Hubble, and the constant, originally invoked to maintain a steady-state universe, was unnecessary. Fortunately, though, the mathematics underlying the constant had become important tools for physicists; observations in 1997 and 1998 by Saul Perlmutter, Neta Bahcall, and others showed that the universe will continue expanding indefinitely and sent theorists back to the drawing board to revise their equations. The cosmological constant returned triumphant, and while its inventor might never have approved of it, today's scientific community gives it an honored role in *God's Equation*. *--Rob Lightner*

From Publishers Weekly
For decades, scientists have debated whether the universe will eventually collapse upon itself, will expand until it reaches an optimal size and remain steady, or will expand forever. To most everyone's surprise, studies of particular huge supernovae are providing evidence that the last possibility may be right and that billions of years from now the universe will be an unimaginably immense void of burned-out stars. The explanation for this may lie in the "cosmological constant," a part of Einstein's field equation for general relativity. Though Einstein described the constant as the greatest blunder of his career, many scientists now think that it could correctly represent some kind of "funny energy" pushing the universe apart. Aczel (Fermat's Last Theorem; Probability 1) contends that Einstein's equation for the cosmological constant is our best approximation of what he calls "God's equation": the ultimate summary of how the universe works. Though Aczel's analysis of Einstein's work requires familiarity with advanced mathematics, that analysis makes up only a minor portion of his book, and most readers will appreciate the author's inclusion of the great physicist's letters to astronomer Erwin Freundlich. Translated here for the first time, they give a glimpse of Einstein's ambition and of his occasional indifference toward collaborators who were no longer useful to him. Aczel's writing is marred by his proclivity to make hyperbolic statements ("Einstein became one of the greatest celebritiesApossibly the greatestAthe world has ever known"), and some of his historical observations are na?ve. Those fascinated by Einstein will find much of interest here, but general readers hungry for information about recent developments in cosmology may want to consult more accessible authors, such as John Gribbin (The Case of the Missing Neutrinos). Figures not seen by PW. (Oct.)

From Library Journal
In this well-written book, Aczel (Fermat's Last Theorem: Unlocking the Secret of an Ancient Mathematical Problem) attempts to explain in lay terms the meaning and significance of Einstein's theory of relativity; to a

large extent, he succeeds. He shows us how Einstein developed and modified the theory and how he interacted with others working in mathematics, physics, and astronomy. Aczel explains that Einstein proposed a mathematically elegant equation, based on physical, philosophical, and aesthetic considerations, whose solutions (if found) would describe the large-scale behavior of the universe. He then modified the equation by adding a cosmological constant, since his first solutions indicated that the universe must be expanding, and no physical evidence to that effect existed at the time. When it was later shown that the universe was indeed expanding, he removed the constant, calling it a mistake. Yet new evidence seems to show that even when he thought he was wrong, Einstein may have been rightAthe cosmological constant may be essential to our understanding of the universe. For public libraries.AHarold D. Shane, Baruch Coll., CUNY

Users Review

From reader reviews:

Hugo Mann:

Reading a reserve can be one of a lot of activity that everyone in the world adores. Do you like reading book therefore. There are a lot of reasons why people fantastic. First reading a guide will give you a lot of new facts. When you read a publication you will get new information simply because book is one of various ways to share the information or their idea. Second, examining a book will make you more imaginative. When you examining a book especially tale fantasy book the author will bring you to definitely imagine the story how the personas do it anything. Third, it is possible to share your knowledge to other folks. When you read this God's Equation: Einstein, Relativity, and the Expanding Universe, it is possible to tells your family, friends and also soon about yours guide. Your knowledge can inspire the others, make them reading a reserve.

Joseph Cobble:

Typically the book God's Equation: Einstein, Relativity, and the Expanding Universe has a lot info on it. So when you read this book you can get a lot of help. The book was published by the very famous author. The author makes some research prior to write this book. This specific book very easy to read you can find the point easily after scanning this book.

Frances Smith:

On this era which is the greater individual or who has ability to do something more are more treasured than other. Do you want to become certainly one of it? It is just simple strategy to have that. What you need to do is just spending your time very little but quite enough to enjoy a look at some books. Among the books in the top listing in your reading list is usually God's Equation: Einstein, Relativity, and the Expanding Universe. This book that is qualified as The Hungry Hills can get you closer in turning into precious person. By looking way up and review this e-book you can get many advantages.

Betty Callahan:

What is your hobby? Have you heard that will question when you got college students? We believe that that question was given by teacher to their students. Many kinds of hobby, Every individual has different hobby. So you know that little person including reading or as reading become their hobby. You need to know that reading is very important along with book as to be the matter. Book is important thing to provide you knowledge, except your own personal teacher or lecturer. You see good news or update regarding something by book. A substantial number of sorts of books that can you choose to use be your object. One of them is God's Equation: Einstein, Relativity, and the Expanding Universe.

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