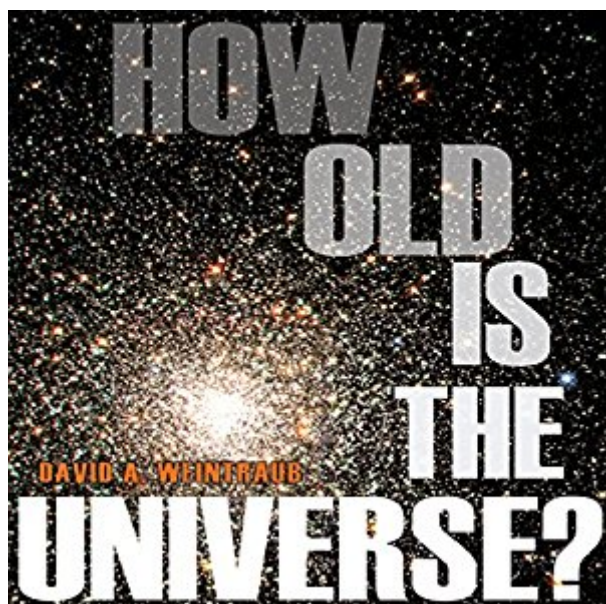


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# How Old Is The Universe?



## Synopsis

Astronomers have determined that our universe is 13.7 billion years old. How exactly did they come to this precise conclusion? *How Old Is the Universe?* tells the incredible story of how astronomers solved one of the most compelling mysteries in science and, along the way, introduces listeners to fundamental concepts and cutting-edge advances in modern astronomy. The age of our universe poses a deceptively simple question, and its answer carries profound implications for science, religion, and philosophy. David Weintraub traces the centuries-old quest by astronomers to fathom the secrets of the nighttime sky. Describing the achievements of the visionaries whose discoveries collectively unveiled a fundamental mystery, he shows how many independent lines of inquiry and much painstakingly gathered evidence, when fitted together like pieces in a cosmic puzzle, led to the long-sought answer. Astronomers don't believe the universe is 13.7 billion years old - they know it. You will too after listening to this book. By focusing on one of the most crucial questions about the universe and challenging readers to understand the answer, Weintraub familiarizes listeners with the ideas and phenomena at the heart of modern astronomy, including red giants and white dwarfs, cepheid variable stars and supernovae, clusters of galaxies, gravitational lensing, dark matter, dark energy and the accelerating universe - and much more. Offering a unique historical approach to astronomy, *How Old Is the Universe?* sheds light on the inner workings of scientific inquiry and reveals how astronomers grapple with deep questions about the physical nature of our universe.

## Book Information

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## Customer Reviews

When we look at something, it is only natural for us to wonder how old it is and where did it come

from. This book answers those questions about the universe. Professor Weintraub does a fantastic job of showing the scientific evidence that has been accumulated over man's history that leads to a very accurate answer to this question today. Since something has to be at least as old as the things within it, he starts by discussing how we have determined the age of our Earth and Solar System, then the stars and our galaxy and finally other galaxies and the entire universe. Along the way there is a lot of interesting science covered and stories of many of the pioneers in science and how they made their contributions. Many interesting personal stories about these people are uncovered in this journey. One I found particularly interesting was the story of Henrietta Leavitt, who was one of a group of human computers hired to do mathematical calculations by hand for astronomers in the early 1900's. She was paid 30 cents per hour (5 cent more than most because her boss knew she did exceptional work). They were all women since they could be paid much less. In 1908 she made one of the most significant discoveries of the 20th century in her analysis of Cepheid variable stars even though she was not an astronomer nor expected to do any analysis, just arithmetic. This book covers a lot of science to come to the answer of the age of the universe and is a beautiful coverage of the scientific method. It is a true masterpiece!

This book is a fascinating guide to modern astrophysics with a compelling theme - what is the age of the universe. I especially liked the discussion on dark matter and dark energy. The use of real data from modern astronomical satellites in graphical form was particularly interesting. Weintraub neatly builds upon discovery after discovery until we get to the (caution, spoiler) magic number: 13.7 +/- billion years old. If you wonder how we can know so much about the entire universe - past and present - sitting on our small planet in the suburbs of the Milky Way, read "How Old Is the Universe?".

An excellent book that takes you step by step through the process that astronomers used over the course of the last millennia to establish what we know today about the universe. Several friends bought this after I told them about it. Does not require a Ph.D. and you can Google the author for 4 youtube classes he gave to adult learners. Warning: NOT for creationists!!!

One of the best books on cosmology because of the lucidity with which the author explains extremely complicated subjects. This relatively short book covers a lot of ground fluidly while retaining the fine balance between making things understandable but without making them boring or needlessly repetitive. The book contains some of the best explanations I have read on the Hubble's

constant, dark matter (including Machos and Wimps) or even classical topics like relativity, quantum mechanics or religion (!)

Very well written and fascinating. Lays out the logic of how astronomers have deduced the 13.7 billion years since the big bang in a clear and easy to understand manner. Allows you to follow the history of thought and solid evidence of this topic without dumbing it down. I hope there will be additional books from David Weintraub in the future.

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