

Book Review : The Whole Shebang by Timothy Ferris

As the title of the book suggests, *The Whole Shebang* is about, well just about everything you can think of in cosmology. The author, Timothy Ferris, attempts to give us a broad overview of the current state of cosmology and the directions it may take in the future.

The book is divided into twelve chapters that each deal with a different aspect of current cosmological thinking. The first chapter gives a history of the development of the cosmological model, from the ancient Greek philosophers to the current big bang theory. The rest of the chapters then explore the big bang model, and are mainly preoccupied with the search for the value of the cosmic mass density Ω . If Ω is less than one, the universe will expand forever, greater than one it will eventually collapse. Currently the value for Ω has been calculated to be very close to 1 (within an order of magnitude which is quite accurate when you are talking about astronomy). In this book Timothy Ferris argues that Ω , for various reasons, should be equal to 1 and in this case the universe will expand forever, at a rate that approaches but never quite reaches zero. The arguments for this value of Ω include dark matter, inflation, and the geometry of the universe, all of which are examined in detail in this book. Even though he argues for the value of Ω being 1, the author still manages to concede that this may not necessarily be true and states observations which do not give an Ω value of 1.

Apart from the search for Ω , *The Whole Shebang* gives many other interesting topics a look in, such as the mapping of large scale structure in the

observable universe, weird quantum effects, cosmic evolution, and others.

It should be noted that this book is only an overview of ideas, and does not analyse anything in any real depth which might make it a bit too simple for anyone looking for challenging ideas in its pages. That being said, what this book does explain marvelously is the actual methods that are used to obtain much of the data about the universe that a student reading a textbook takes for granted. Instead of simply stating the results of many years of hard work, this book gives us a feel for the trials and frustrations of astronomers and cosmologists as they go about their work. The book also spends time on describing the personalities behind the big names in cosmology, giving the reader a much better insight into the people who spend much of their lives worrying about the nature of the universe. I found Timothy Ferris writing style in this book was quite enjoyable, as he often makes amusing observations during his descriptions. One of my favorites was that one of the

most accurately measured values in science was the temperature of a wall of fire 10 billion light years away. The book also contains many references for further reading should the reader wish a more in depth discussion of a certain topic.

All in all, I found this a very fascinating read and would recommend this book to anyone who is interested the big cosmological questions, but does not want to be immersed in a sea of mathematics.

Rohan Dowd

