

Books placed on reserve in the Physics & Astronomy library (3rd floor B&L)

- ◆ **Alex Vilenkin, *Many Worlds in One*, Hill and Wang division of Farrar, Straus and Giroux** – *Many Worlds in One* is an excellent and relatively accessible book discussing the historical development of the cosmological multiverse by a person who played a role in its development. Vilenkin knows the history and the players and does a nice job blending the personalities with the science. In a way, if Vilenkin were a little further from the subject, the book might be a bit more accessible. The multiverse concepts Vilenkin chooses to discuss are the most important ones scientifically, though he only gives the briefest of description of the quantum mechanical many worlds scenario and the mathematical universe hypothesis. There is much in the popular culture of the subject that Vilenkin ignores because it isn't something that scientists take seriously.
- ◆ **Alan H. Guth, *The Inflationary Universe*, Basic Books** – Alan Guth is the founder of the idea of cosmological inflation. The theory, as modified by Guth and others, underlies most of the cosmological multiverse concepts. This is an historical treatment of the development of inflation along with many of the concepts necessary to understand inflation. This work is dense and rather inaccessible to the average science buff, but is an incredible reference for the non-expert scientist or the very well read and dedicated science buff. This book is less accessible than Vilenkin's *Many Worlds in One*.
- ◆ **Paul Steinhardt and Neil Turok, *Endless Universe: Beyond the Big Bang*, Doubleday** – Steinhardt and Turok did the initial work on the cyclic colliding brane (Ekpyrotic) multiverse. This is the story of that work and how it relates to and compares with the inflationary multiverse. Steinhardt and Turok have two items on their agenda with this book, convey the new idea and defend the idea against the current paradigm. This is not so much an overview book of multiverse concepts as it is a work that stakes out a position of one cosmological multiverse model versus another.
- ◆ **Bernard Carr, ed., *Universe or Multiverse*, Cambridge University Press** – This book is a compilation of papers by many scientists and philosophers who are leaders in thinking about a multiple universe reality. Most of the papers are write-ups of conference talks given by experts for experts. The majority of the content of this compilation is rather inaccessible for non-experts. However, this is an amazing reference for interest experts or very dedicated non-experts. Some of the papers are fairly accessible.
- ◆ **Colin Bruce, *Schrödinger's Rabbits*, Joseph Henry Press** – This is a very nice, accessible treatment of the Many Worlds multiverse of quantum mechanics and all the associated issues. There is very little mention of other types of multiverses.
- ◆ **Martin Rees, *Our Cosmic Habitat*, Princeton University Press** – Martin Rees is Astronomer Royal of Great Britain and this book is as intellectual and 'astronomy-centered' as you might expect. This book is accessible but very much designed for the serious science buff. There is a great deal of wisdom in this book that seems to be aimed at other scientists. It is rather dry. The main focus of this book is the degree of

uniqueness of our universe. Rees does discuss the multiverse but not so much to describe the different types as to discuss how this relates to the anthropocentrism. Only the cosmological multiverse concepts are discussed and those ideas are not explained as in an overview. Rather, they are mentioned to the extent that multiple cosmological universes with all possible sets of physical conditions means our universe is not unexpected.

- ◆ **Jeffrey A. Zweerink, *Who's Afraid of the Multiverse, Reasons to Believe*** – This is a short booklet written by a physicist with an agenda of making a case for the Christian God in the context of the multiverse. It gives an accessible introduction to Tegmark's multiverse taxonomy along with background and it describes some philosophical and religious arguments surrounding discussion of the multiverse. Dr. Zweerink appears to have a reasonable conceptual understanding of scientific multiverse concepts. The second half of this book is very focused on the religious agenda.
- ◆ **Rodney D. Holder, *God, the Multiverse, and Everything, Ashgate Publishing*** – This book was written with an agenda of making a case for intelligent design. It discusses some aspects of the multiverse but is not a popular overview of the subject and seems to be heavily biased by design.
- ◆ **Fred Adams, *Our Living Multiverse: A Book of Genesis in 0+7 Chapters, Pi Press*** – This is a very readable book that discusses cosmology and astronomy and the origin of earth and life. It mentions multiple universes but focuses primarily on cosmology and life in the one universe we *know* exists. This book makes no attempt to survey the landscape of multiverses.
- ◆ **David Deutsch, *The Fabric of Reality: The Science of Parallel Universes and its Implications, Penguin*** – This is a rather inaccessible book that includes, among other things, discussions of the many worlds view of quantum mechanics. The author has a vision and an agenda that he is pushing with this book.
- ◆ **Michio Kaku, *Parallel Worlds: A Journey through Creation, Higher Dimensions and the Future of the Cosmos, Doubleday*** – This is an excellent, though somewhat rambling, book that meanders through many topics in cosmology and modern physics. Kaku does a nice job blending interesting theoretical ideas with stories and interviews of the players. In the process, however, Kaku has produced a book full of names and bits of history that add color but also give something of a disjointed, historical feel in places. It is a masterful treatment for someone with some familiarity of the subjects and the individuals, but would likely strike less knowledgeable readers as being somewhat inaccessible and unnecessarily packed with examples of name-dropping. In a rather scattered fashion, *Parallel Worlds* covers the cosmological and quantum mechanical ideas leading to the core scientific concepts of multiple universes.