Review of “Cosmology A Very Short Introduction” by Peter Coles

By GPE

13/09/2021

This book is one of Oxford University Press’s “A Very Short Introduction” series which are available for a very broad range of topics. This series is very popular and I have read about a dozen titles in this series and enjoyed them all.

This book is aimed squarely at the curious lay reader and has only a couple of very simple equations in the whole text. One being E=mc2 the other being an equation for red shift. This book is definitely in the light reading category for any scientist.

Chapter 1 introduces the concept of cosmology beginning with ancient myth and legend and shows how these old ideas have given way to a modern scientific understanding.

The second chapter introduces Einstein’s theory of Relativity and concludes with a short piece on black holes. The next chapter explains in simple terms how the General Theory of Relativity predicts an expanding universe and discusses the large scale geometry of the universe and the Friedmann models which I feel are emphasized too strongly as they require very special conditions of symmetry although to be fair this text is rather dated (published 2001).

Chapter 4 discuses cosmic expansion and red shift, while chapter 5 gives evidence for the big bang and explains the great syntheses in physics but the book shows it’s age here not being able to discuss the results from the LHC. The next chapter discuses whether the universe is open or closed and the Omega parameter that defines this.

The final two chapters explain large scale structure and the quest for a theory of everything.

Overall I found this book stimulating, but I felt that a few recommendations for more advanced study would be helpful, but still well worth reading.