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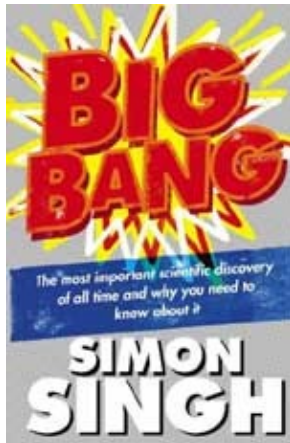
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November 2004

Reviews

'Big bang'

reviewed by Helen Joyce



Big Bang

by Simon Singh

It feels like we've always known that the universe began with a Big Bang, and like the Big Bang could never have been called anything else. But this is far from the truth, as Simon Singh explains in this overview of the state of human knowledge about the beginning of everything (or, as Calvin of "Calvin and Hobbes" preferred to call it, the Great Kabloolie).

The story starts with the Ancient Greeks, and their model of heavenly bodies moving in circular orbits around the earth. Copernicus, Kepler and Galileo comprehensively demolished this viewpoint with a combination of new observations and theories. (Galileo was forced to recant by the Inquisition, and to deny his belief that the Earth rotated around the sun, but famously whispered "And yet, it moves" even as he recanted.)

Kepler showed the planets moved in ellipses, not epicycles (paths built up from circles). He wrote: "We do not ask for what useful purpose the birds do sing, for song is their pleasure since they were created for singing. Similarly, we ought not to ask why the human mind troubles to fathom the secrets of the heavens." And this statement could form an epigraph for this entire book – before the era of computerised telescopes, astronomy was such a difficult and taxing business that it is incredible anyone did it at all.

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By the 20th century, astronomers had reached the point that they could ask the most audacious question of all: did the universe always exist, or did it come into being at some point in the past? Many scientists disliked the second idea, feeling that it was close to implying creation and therefore a creator; it had been too short a time since the church had felt it could dictate what scientists should think about, and scientists were still fiercely protective of their hard-won independence from theology.

The central part of the book documents the epic battle between proponents of the two main theories of the twentieth century: The Big Bang and the Steady State. Singh shows us the major players and their achievements: the men (and occasionally women) staring at the heavens night after night, year after year, risking their eyesight and even their health; the theorists tossing matter, energy and existence around as if they could dispose of everything that has ever been and ever will be with a few choice equations; the fanatics; the enemies; the champions and the unjustly forgotten.

The book is very well documented, with a crib sheet at the end of each chapter, an appendix entitled "What is science?", a plentiful glossary, a judicious choice of further reading, and a useful index. Although the book is about the size of a housebrick, it is, like everything Simon Singh writes, a ripping good yarn, with complex ideas made clear, and difficult science made accessible.

Book details:

Big Bang

Simon Singh

hardback – 544 pages (2004)

Fourth estate

ISBN: 0007152515

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