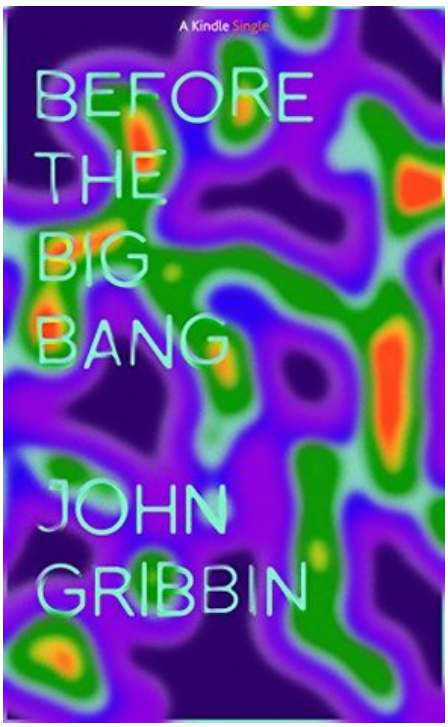

Before the Big Bang

John Gribbin

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The Big Bang was not the beginning of time. Before the Big Bang, there was a tiny fraction of a second during which a process called inflation expanded a seed much smaller than the nucleus of an atom into a fireball the size of a basketball -- the Big Bang itself. From this fireball, the Universe as we know it developed. The origin of the seed from which the Universe began is not known with certainty, but as John Gribbin explains the most likely explanation is that it was a fluctuation of quantum energy in an eternal sea of cosmic energy. And that means that other seeds must surely have inflated to become other universes, bubbles in the cosmic sea. It is even possible that a collision between our universe and another bubble on the sea of eternity may have left an imprint on the cosmic background radiation, the echo of the Big Bang itself.

John Gribbin is an award winning science writer best known for his book *In Search of Schrodinger's Cat*. He studied astrophysics under Fred Hoyle in Cambridge, and is now a Visiting Fellow in Astronomy at the University of Sussex.

Before the Big Bang Details

Date	:	Published February 3rd 2015
ISBN	:	
Author	:	John Gribbin
Format	:	Kindle Edition 41 pages
Genre	:	Science, Physics, Nonfiction, Astronomy, Space, Popular Science

From Reader Review Before the Big Bang for online ebook

Elizabeth Felix says

"A good introduction"

This was an impulse download as part of the Kindle Owner’s Lending Library so I didn’t have to pay for it which is great. If you’re an Amazon Prime member I would really recommend taking advantage of this perk along with the Kindle First program which gives you a choice of new release books that you can keep for free each month.

I’ve got a science background so I’ve got a small advantage over the average reader but haven’t delved into Physics since school. I thought this was clearly written with only small sections where the ideas were simply impossible to truly explain in such a short format. I really appreciated that the ideas where explained chronologically so you get a feel for how the science has developed over time.

I read this while having breakfast on a Sunday morning so it really is a very quick introduction to the theories surrounding the big bang and the creation of the universe.

Karin says

Good read

Enjoyed the book, well written as all his books. many developements after the completion of this book. good for every person.

Jay says

I have no background in physics or cosmology, but I'm fascinated by both (Andrei Linde is probably my favorite among modern physicists). Gribbin's prose is generally understandable to the non-math and non-physics-oriented reader. But this is also pretty dense stuff (I need to re-read a lot of it) that you need to parse carefully if you want to catch the full implications of what he's getting at. The implications are profound and epic. Gribbin's book does need serious proofing and editing, though. The uneven and sometimes sloppy prose gets in the way of appreciating the elegance of the concepts he's describing: how sub-atomic particles, electromagnetism, gravity and photons grew out of a Planck-length singularity and then, though the theoretical process of inflation, set the stage for a spacetime expansion, otherwise called the Big Bang. I'm in awe of modern cosmology and of the scientists out on the frontiers of the knowable. I loved the sections particularly teasing out the implications of the quantum fluctuations before the Big Bang and of the minute ripples in gravity waves that might be detectable in the cosmic microwave background. These ideas could bring us a step closer to proving the existence of a multiverse. So, editorial critiques aside, I found this a really compelling read. Recommended to all fans and followers of cosmology!

Lars E. Nelson says

A great overview of the current understanding of cosmology. I liked the concision.

I gave it five stars because the book succinctly presents the current state of cosmology. I have read much of the material from a variety of sources and feel that it is accurate. I would recommend it to anyone that is interested in Cosmology because it clarifies a lot of the details with out long explanations of the history. It

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Ramon David says

Excellent Read: contents are detailed, yet not incomprehensible by novices such as myself. Very limited equations yet the results of the equations are spelled out very well. Read it. Unless you are a PhD in cosmology or physics you will enjoy this book.

contents are detailed, yet not incomprehensible by novices such as myself. Very limited equations yet the results of the equations are spelled out very well. Read it. Unless you are a PhD in cosmology or physics you will enjoy this book.

Ryan Curry says

Overall, a quick and easy to read summary of much of the current thinking on these topics. The book is broken down into four sections:

1. The Big Bang
2. The Puzzles that Pointed the Way
3. Inflation
4. The Birth Pangs of Universes

These are heavy topics that Gribbin deals with, and I find it very impressive that he is able to cram so much information into such a small space.

I came away from this one with a good list of other sources to check out, and the chapter on Inflation made it clear to me that I very much need to do more reading on that topic. and I am looking forward to reading more work by Gribbin. The

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Ullrich Fischer says

Clear, Concise, Inspiring

From hundreds of gods to one god to a beautifully simple overview of a multiverse teeming with bubble universes each with their own simple rules of physics evolving to mind boggling complexity in the resulting details. A truly inspirational story of the power of human intellectual tenacity. This is the most recent chapter of that story told in broad strokes without overwhelming the mathematically challenged readers with the

details of the journey.

Katie Owsiany says

Great update on current theory

The book was great because the author repeats key concepts many times throughout the book in a variety of ways. You don't have to agonize over every paragraph, be assured that you will understand the point in at least one iteration. It gives just enough detail for the broad strokes of modern astrophysics to be communicated, and importantly, enough detail for those ideas to be appreciated on a level higher than typical pop physics. It's as if the author read one too many misleading science news articles and said "just TELL them what we're talking about!"

Carolina Liechtenstein says

Pretty easy to read and gives a good sense of scale at the quantum level. I enjoyed it immensely and suggest it to those interested in cosmology and physics.

Dr Zorlak says

Well, John Gribbin is no Martin Gardner, but after you read enough of his books you start appreciating his dispassionate, robotlike prose. This is a very short essay describing in lay terms the conditions prevailing during the first couple of nanoseconds during and after the Big Bang. It is also a great summary of inflationary theory. Fair as always, Gribbin gives everybody his due, even those who first published their theories in obscure journals. Which is good.

An intense, fast read.

Jan Leslie says

Great essay

Like everything of his I have read he breaks down very complicated ideas and concepts in to understandable explanations that scientific enthusiasts can understand. Even without much benefit from formal studies.

Richard Raw says

Fascinating

I loved this book. We live in exciting times in the world of astronomy. Very vivid imagery, beautifully

descriptive. I can't wait to read it again.

Jeff says

Somewhat speculative but still good science

John Gribbin's book offers an easy to understand (relatively speaking) explanation of big bang cosmology, and, in particular, different aspects of the theory known as "inflation." He also talks about the concept and ramifications of so-called "multiverse" theories and how they might be more than just interesting speculation--i.e., how they might be testable using current and future scientific techniques. Although it is not a full explanation of cosmology or of the big bang theory, it offers interesting thoughts on topics relative to these topics and thus supplements standard treatments of the same. Overall, it is a good short book on modern cosmology.

Kathy says

Thanks to a reviewer on this site I looked up this author and found this 41-page book that I could easily and enjoyably digest. I had not read any of the many books he has published previously.
This one was available on Kindle Unlimited as are several others.
There is a brief summary of universe theories from many sources over the past century presented in understandable language. It's rather like a fly over. Just right for a pedestrian such as myself...
Outline science, yippee.
"The reported discovery, in 2014, of gravitational radiation from the inflationary era is at least circumstantial evidence that these ideas are correct, and that our Universe is just one among many."
Hmmm... then should we be capitalizing universe? Sorry, I get silly after reading abbreviated theories from cosmologists and particle physicists. But I really did enjoy the book.

Brian Clegg says

In this compact (50 page) ebook, veteran popular science writer John Gribbin takes on the period in the current best-accepted theory of the origin of the universe, the hot big bang, that came before the big bang bit.

Although I also wrote a book called Before the Big Bang, I'm not overly miffed as this is a totally different approach. Where my book was about the historical context leading up to the big bang theory, plus alternative models of the origin of the universe, some of which have more of a 'before' than the vanilla big bang theory, Gribbin is filling in a much misunderstood aspect of this central cosmological theory. As he frequently points out, the 'big bang' in question is not the beginning of the universe, but the point after inflation when things get seriously hot (though it's not totally clear that Fred Hoyle meant this at the moment he coined the term).

Gribbin starts us off with a bit of background, revealing, for instance, in a more robust fashion than usual that Lemaitre and not Hubble was the discoverer of what is now known as Hubble's law. He then gives a clear picture of the nature of the big bang itself, based on a book by Soviet cosmologist Igor Novikov that dates back to the late 1970s, and remarkably is still pretty much in line with current understanding.

From there, Gribbin gives us an excellent exploration of inflation and some of the reasoning behind the possibility of a singularity (or at least near-singularity) for the actual beginning of our universe, followed up with a good summary of the multiverse concept, and how it could be driven by different possible kinds of inflation, all brought up to date with useful analysis of the BICEP2 mis-discovery of evidence for inflation.

Gribbin could have been a little less definitive about some of this, because however much cosmologists like to think they've left their reputation for speculation behind, there is still some (highly educated) guesswork in the field. When Gribbin says 'The story of the Big Bang is as well established as any story in science,' it feels a bit like when at the start of the twentieth century budding physicists were told 'there are only a few minor details to sort out, but basically we've got physics cracked.' And then relativity and quantum theory came along. So for instance, on dark matter, Gribbin comments 'we now know... that the Universe also contains something called dark matter', where I think it would be more balanced to say 'we now think...' but generally speaking the only other negative here is that because the book(let) is so short, it is quite condensed information, so is not as easy a read as the author's full length books.

If you've got the price of a cup of coffee to spare, why not give your caffeine addiction a miss and spend it instead on something that really will improve the mind? There'll even be some change.
