



Einstein's Unfinished Symphony: Listening to the Sounds of Space-Time

Marcia Bartusiak

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In a handful of observatories around the world, scientists are waiting, and listening. Their quest: to be the first to detect gravitational waves, infinitesimal quakes that stretch and compress space-time and could add a brand-new dimension to our universal knowledge-allowing us to hear a sun going supernova, black holes colliding, and perhaps one day, the remnant rumble of the Big Bang itself...

Einstein's Unfinished Symphony: Listening to the Sounds of Space-Time Details

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From Reader Review Einstein's Unfinished Symphony: Listening to the Sounds of Space-Time for online ebook

Mark Reynolds says

At first I was skeptical, because while there are many popular books on physics and astronomy, not very many of them are well written. This one is. There are not too many of the "hyped-up" sentences that makes physicists sound like wizards. I just ignored those sentences. Most of the book is a down-to-earth history of gravitation wave research, mostly experimental, and the prospects for detection. Of course, now LIGO has detected two events, but even so, this early history is interesting.

For the technically savvy reader, much of the first few chapters can be skimmed, as Bartusiak is reviewing well-known physics. For other readers, though, this is some valuable background. If you are really interested in the technical background, I recommend Kip Thorne's book "Black Holes and Time Warps" from 1994. He gives a nice prediction of how the first gravitational wave will be observed, and he was almost completely correct.

The insight into the physicists involved and their human-ness is pleasing to me, because you see that we are just the same as everyone else. We have faults as well as good qualities, but we're driven by a desire to understand something greater than ourselves. And that's exciting.

Edward says

The Prelude and First chapter cover the basics quickly which is merciful for the reader familiar with the concepts but reinforces the important geometrical ideas concerning space-time. The major focus of this work is on the development of gravity wave detectors and the personalities involved. The astronomical sources of gravity waves, such as binary neutron stars and black holes, are covered to a lesser extent but it's not till late in the book that you begin to understand the relationship between the frequency of these waves from these sources and the sensitivity of the current generation of gravity wave detectors. As mentioned, you later learn that the current detectors would only be sensitive to cataclysmic events of low probability, such as collision of neutron stars and black holes, even while events that continually propagate gravity waves, i.e. neutron stars in orbit about a companion star, remain undetectable because the frequency of their gravity waves remain well below the limit of detectability. The last couple of chapters now seem to be wishful thinking since severe economic issues after the book's publication a decade ago have severely damped schedules for planned improvements.

Liam Day says

I found it somewhat repetitive toward the end and the chapters on current interferometrical efforts to detect gravity waves not nearly as interesting as the history leading up to them, but that history is among the best histories of the science of gravity I have ever read.

David Medders says

What a fun and interesting book! Written clearly enough for the astrophysical novice. Detailed enough to open up an incredible field of scientific exploration and discovery. The theme of the book documents the historical development of Einstein's general theory of relativity and the subsequent extraordinary expansion of experimentation and theory. The specific focus is the pursuit of observing/detecting a gravity wave as one implication of Einstein's theory. I was dazzled by the exceptional efforts and creativity of pioneers in this field, both in crafting profound levels of precision in experimental testing along with the persevering pursuit of theory to express our growing understanding.

I was pleased with the author's balance between fair descriptions of key players and the global development of this field of study. Given the extraordinary range of wave frequencies being measured and sought, this book was music to my ears whetting my anticipation for the discoveries to come.

Converse says

The main reason I didn't give this book on astrophysics a higher rating is that the main topic, gravity waves, haven't been observed yet (also checked LIGO website, the site for those working on this topic) so book has hypothetical quality. Also left me with questions about the science. Otherwise well-written

John Gribbin says

Simply the best book about the history of the long search for gravitational waves. This edition appeared before such radiation was actually discovered, but puts everything in perspective -- and an updated edition is coming soon.

Katie says

What I learned from this book... lots and lots of physics! Wonderful introduction to the thinkers that came before and after Einstein. Good intro for the beginner into how physicists think and work

Colette says

I read this back when it first came out about 15 or 16 years ago. It is one that I have thought about over and over through the years. I no longer remember what captured my interest and imagination, but I do remember earnestly hoping these scientists would find what they were looking for. I'm glad they finally have. The writing has stayed with me.

Ashish Jaituni says

This is a wonderful book. Very well written. It tells the story of search for Gravitational waves till today. Prof. Bartusiak is a very good writer, much better than many scientists who write books on popular science.

Drake Tungsten says

Good background on the study of gravity and the related technology/facilities (such as LIGO). This book came out before any gravity waves were actually detected, so it's nice to see that in the last few years that the search has born fruit.

Steve says

As are her other books, this well written. However, I found it dragged a bit after she covered the basics of gravity wave physics. Tough when you pick a topic that is still in the realm of theoretical.

Eric says

The title is cool but the author tries to hard to continue using the music metaphor throughout the book. Also, I think it's too long. It was interesting for like 2/3 of it but she really stretches things out for no reason.
