



The Last Three Minutes: Conjectures About The Ultimate Fate Of The Universe

Paul Davies

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Ragnarok. Armageddon. Doomsday. Since the dawn of time, man has wondered how the world would end. In *The Last Three Minutes*, Paul Davies reveals the latest theories. It might end in a whimper, slowly scattering into the infinite void. Then again, it might be yanked back by its own gravity and end in a catastrophic "Big Crunch." There are other, more frightening possibilities. We may be seconds away from doom at this very moment. Written in clear language that makes the cutting-edge science of quarks, neutrinos, wormholes, and metaverses accessible to the layman, *The Last Three Minutes* treats readers to a wide range of conjectures about the ultimate fate of the universe. Along the way, it takes the occasional divergent path to discuss some slightly less cataclysmic topics such as galactic colonization, what would happen if the Earth were struck by the comet Swift-Tuttle (a distinct possibility), the effects of falling in a black hole, and how to create a "baby universe." Wonderfully morbid to the core, this is one of the most original science books to come along in years.

The Last Three Minutes: Conjectures About The Ultimate Fate Of The Universe **Details**

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Rehab Mousa says

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Feliks says

A wonderful anecdote to the tedious gushing and over-exuberance of today's science-groupies. Dash of cold water in their faces.

For us realists, this is a book designed to satisfy. What is all this lust for gadgetry and technology lately? In this unique book, the straight dope is dispensed: our planet will one day die; our sun and moon will one day collapse. The Milky Way galaxy too, has a 'lifespan'. So do all the stars. The universe itself in no way, lasts 'forever'...there is no 'eternity'. And there's nothing anyone can do about this.

Everything comes to an end somehow. This book steps way up above it all to look down at the universe with a cold, candid, unafraid eye and tells us (no sugar-coating) where everything is ultimately headed. Death.

Its well-written and engaging; also succinct. Each aspect of the manner in which galaxies, solar systems, space, time, energy, matter; the universe itself--EVERYTHING--must at some point, dwindle and expire--is described with dexterity.

And its great. Freeing. Knowledge is power; its better to 'know' than to 'not know'. Can really put you at ease and at peace. (*the way I see it, the moral of the story here is to party it up!*)

Yusuf Shihabi says

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Bria says

At first I scoffed, because, hey, you don't need to explain how gravitational lensing works to ME. But even when he was telling me something he knew, he was so overly dramatic as to elicit glee. And by the time he was throwing out calculations as to how to build a superbeing that can overcome the burning inferno of the final contraction of the universe, I had already regained my failing libido, and more.

Muhammed Mujahed says

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Sarah says

<http://www.audiobookar.com/2010/01/bl...>

Hussein Khwaira says

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William Schram says

This book was quite interesting. The cover pretty much sums it up. Ever since people figured out that the Universe is expanding, it immediately followed that it must have had a beginning. Before this, many scientists merely assumed that the Universe just lasted for an infinite amount of time. Given that the Universe had a beginning it must also end sooner or later. The matter of how it will end is up for speculation and there are several possible ways. None of these ways are particularly pleasant, but I can take solace in the fact that I will be long dead by the time all of this comes to pass. We're not talking about decades, in this case, we are not even talking about millennia. Billions of years must pass before any of this even comes close to happening. By that time the sun will run out of Hydrogen Fuel to use and will start to use Helium to fuel itself. At that point, the Sun will expand until it engulfs the orbit of Venus and the oceans will boil away.

Of course, we could also be destroyed by a giant asteroid or some other space object. This too would take a while, but we are protected in the sense that space is massive, and the Earth is relatively small in it. So then there are other ways for our Galaxy to Bite the Bullet, so to speak. It could collide into another Galaxy, There could be a Giant Black Hole that sucks us into itself, but none of these events are very likely.

The ultimate end of the Universe depends on two things. The first is the amount of mass in the Universe, and the second is the rate of expansion of the Universe. Now, these are generally called the Big Crunch or the Big Freeze. This is generally what I call them. Either the Universe collapses back on itself, or it expands so much that new stars cannot be born. All of the stars will eventually become either Black Holes or Black Dwarfs, massive chunks of matter that are mere husks of what they were.

None of this is really important, though, since I will be long dead by the time all of this happens, unless they find some way for me to become a Star Child a la **2001: A Space Odyssey**.

Muhammad Shalaby says

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Bob Nichols says

This book repeats several familiar cosmological themes: there was no time before the Big Bang, the Big

Bang is the origin of space, space stretches through time, and this stretching continues through eternity, or until it begins to collapse back on itself through gravitational attraction (Big Crunch). For the lay person, understanding is feeble, even though there is great appreciation for all the cosmic mystery and majesty, and many key questions are left unclear. For example, the author says that energy (light) has mass and therefore has gravitational attraction, but there's also a hint that space, constituted by mass, is subject to gravitational pull, and that light is curved because it rides through (on) space (as opposed to light itself having mass that is subject to gravitational pull).

Somehow in this zillion-year cosmological history, Davies offers the possibility of human survival, which strikes the reader as more a secular aspiration for eternal life than as reasoned conjecture. Davies also shuts down any question about whether time and space existed prior to the Big Bang. At an intuitive level, one gets his point, but the question still seems so, so legitimate. The most disappointing part of this book is his discussion of the tension between order and disorder (entropy), with the latter the ultimate victor in cosmic time. "Order" he says is "information" as if the meaning is self-evident. Typically, information is understood as the "meaning" an organic body takes from its environment. Whether an exchange of "meaning" occurs between inorganic bodies (e.g., via electromagnetic forces, gravitons) when they influence each other is left unclear. It's not easy for a layperson to venture into cosmology.

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Bogdan Teodorescu ? says

This was a great book. We cannot surely know for sure which the end of the universe will be yet, but Paul Davies does a great job explaining the possible scenarios and describing the processes behind them. Of course, by reading so many science books, some ideas were repeated, for exemple a great deal of stuff explained by Stephen Hawking în his books, but the book is well structured and follows a good path în logic. The author manages to explain very well some quantum principles (Heisenberg uncertainty principle, quantum tunnelling, etc), elementary black hole theory (for ex. Hawking radiation), or baby universes.

"Maybe all we can hope for is that our ancestors will get to know the meaning of the Universe before the end of the last three minutes."

José Uría says

Un clásico en su campo, el de la escatología física. Tiene las virtudes de los libros de Davies, es legible, interesante y aporta ideas interesantes. El repaso de escenarios sobre el futuro del universo es bastante completo incluso para el momento en que fue escrito, pero tiene el inconveniente de que no tiene en cuenta escenarios asociados con una expansión acelerada con una constante cosmológica, al menos con cierto detalle. No obstante, los avances científicos lo han dejado como una obra incompleta en contenidos, pero no desfasada. Y eso dice mucho de este libro. Por lo demás, es relativamente breve teniendo en cuenta la

materia que trata, y apto para todos los públicos.

Yusuf Shihabi says

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