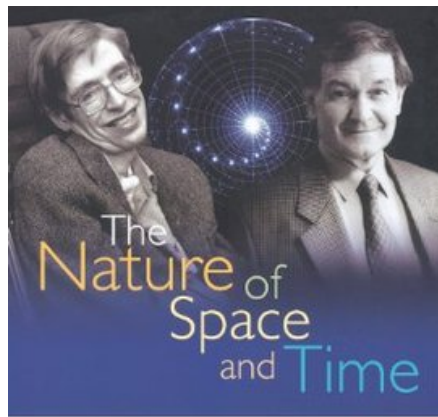




with a new afterword
by the authors

STEPHEN HAWKING
AND
ROGER PENROSE



The Nature of Space and Time (Princeton Science Library)

Stephen Hawking , Roger Penrose

Download now

Read Online ➞

The Nature of Space and Time (Princeton Science Library)

Stephen Hawking , Roger Penrose

The Nature of Space and Time (Princeton Science Library) Stephen Hawking , Roger Penrose

Einstein said that the most incomprehensible thing about the universe is that it is comprehensible. But was he right? Can the quantum theory of fields and Einstein's general theory of relativity, the two most accurate and successful theories in all of physics, be united into a single quantum theory of gravity? Can quantum and cosmos ever be combined? In *The Nature of Space and Time*, two of the world's most famous physicists—Stephen Hawking (*A Brief History of Time*) and Roger Penrose (*The Road to Reality*)—debate these questions.

The authors outline how their positions have further diverged on a number of key issues, including the spatial geometry of the universe, inflationary versus cyclic theories of the cosmos, and the black-hole information-loss paradox. Though much progress has been made, Hawking and Penrose stress that physicists still have further to go in their quest for a quantum theory of gravity.

The Nature of Space and Time (Princeton Science Library) Details

Date : Published (first published 1996)

ISBN :

Author : Stephen Hawking , Roger Penrose

Format : Kindle Edition 144 pages

Genre : Science, Physics, Nonfiction

 [Download The Nature of Space and Time \(Princeton Science Library ...pdf](#)

 [Read Online The Nature of Space and Time \(Princeton Science Libra ...pdf](#)

Download and Read Free Online The Nature of Space and Time (Princeton Science Library) Stephen Hawking , Roger Penrose

From Reader Review The Nature of Space and Time (Princeton Science Library) for online ebook

Todd says

"Time is the fire in which we burn." Delmore Schwartz

"...time is a companion who goes with us on the journey and reminds us to cherish every moment, because it will never come again." Jean-Luc Picard

I found the information in this set of 3 lectures to be somewhat interesting but because I am not a student (or practitioner) of science I found it to be a bit too specific to the field of physics/quantum mechanics/advanced maths/etc. for my general interest.

That said, one big problem I have with this is that he mentions god several times, and given there is no proof of god, why is he continually referring to a scientific "nothing" in his lectures? Even though I am not a scientist, the fact he mentions god tells me his science is not completely rooted in reality but rather at least in some part is rooted in mythology, and that tells me he lives in a world in which I do not live.

Derek says

I gave it a good college try, but was immediately swamped by the intense theoretical physics and deep mathematics involved. As a series of lectures between the two physicists as they voice disagreements about the nature of the universe, it was interesting to be a sort of fly on the wall, to see what these big brains talk about when the rest of us aren't around. On the other hand, they're discussing these things at their own level and not the level of a layman, so one might as well be a fly on the wall for the comprehension of the subject is concerned.

I gave up after failing to understand even the nature of the disagreement.

Maurizio Codogno says

Vent'anni fa Stephen Hawking e Roger Penrose hanno tenuto una serie di conferenze per raccontare come loro pensavano si potessero mettere insieme la teoria della relatività generale e la teoria quantistica dei campi. Non che ci si sia riusciti nemmeno ora a farlo, intendiamoci. Ad ogni modo questo libro raccoglie il testo di queste lezioni. Ve lo dico subito: se non avete studiato fisica a livello universitario non ci capirete molto, o almeno io non sono riuscito a cavarci molto, anche perché la versione epub che ho letto (e che tanto per dire ha un ISBN errato nel colophon...) ha perso dei caratteri una volta letta con Aldiko che è tra i pochi programmi che permettono di leggere un file protetto da DRM; una versione pdf sarebbe stata migliore. Penrose si fa capire un po' di più, Hawking è davvero tosto. Stranamente in un paio di punti mi è parso che Libero Sosio si sia perso: solo che non sono riuscito a copiarli il testo, sempre per colpa del DRM :-(

Stefano says

E' difficile definire questo libro un libro di divulgazione. In realtà si tratta di una serie di lezioni (tre a testa più una discussione finale) in cui gli autori dimostrano le proprie teorie in merito alla natura dello spaziotempo attraverso lo studio delle singolarità nell'ambito della meccanica quantistica e della relatività generale. Per farlo fanno ampio uso di strumenti matematici molto complessi. Per comprendere appieno le dimostrazioni è necessaria una conoscenza specialistica di matematica e fisica (non basta qualche corso di analisi, geometria e fisica generale). Nonostante ciò il libro rimane comunque godibile anche ai non addetti ai lavori, a patto però di accontentarsi di cogliere solo le idee e i concetti generali.

Sarah Khalida says

And all those mathematical equations and terms like Lagrangian and Euler's numbers which I learned in calculus back in undergrad emerged. A very technical read - I skimmed through most of it and highlighted the 'absorbable parts'. More Stephen Hawking in the future for me!

Lance Schonberg says

Up front: this book is not for everyone. I'm actually not certain it was for me. I haven't really studied physics since the courses I took in the early 1990s in university. This was originally written a few years later, but assumes more than merely a rough knowledge of Relativity and Quantum mechanics – you actually need something more than just a basic introduction to really grasp what's going on here.

But, armed with the internet, I persevered, more or less.

The science may be a bit dated, but since the book is 20 years old, that shouldn't be too surprising. It's also hard to tell without more physics, and more recent physics, than I have.

As a result, this is going to be a rather shorter review than I often write.

Hawking and Penrose are having a friendly conflict about the nature and structure of the universe. This is not a book for generalists or people with a passing interest in relativity and quantum mechanics. While the authors assume you have a basic familiarity with the relevant mathematics and quantum mechanics, I might suggest that basic familiarity is more along the lines of post-graduate.

Overall rating: 3 stars, but I should probably actually go with 2. What I understood was interesting, but what I understood wasn't enough of the book. This isn't a popular science book. Penrose and Hawking are talking much closer to the level they operate at. If you're close to that level, the book is probably a lot more enjoyable.

albin james says

Rows and flows of angel hair
And ice cream castles in the air
And feather canyons everywhere
I've looked at clouds that way

But now they only block the sun
They rain and snow on everyone

So many things I would have done
But clouds got in my way

I've looked at clouds from both sides now
From up and down, and still somehow
It's cloud illusions I recall
I really don't know clouds at all

Moons and Junes and Ferris wheels
The dizzy dancing way you feel
As every fairy tale comes real
I've looked at love that way

But now it's just another show
You leave 'em laughing when you go
And if you care, don't let them know
Don't give yourself away

I've looked at love from both sides now
From give and take, and still somehow
It's love's illusions I recall
I really don't know love at all

Tears and fears and feeling proud
To say "I love you" right out loud
Dreams and schemes and circus crowds
I've looked at life that way

But now old friends are acting strange
They shake their heads, they say I've changed
Well something's lost, but something's gained
In living every day

I've looked at life from both sides now
From win and lose and still somehow
It's life's illusions I recall
I really don't know life at all

I've looked at life from both sides now
From up and down and still somehow
It's life's illusions I recall
I really don't know life at all

Caitee Nigro says

This book was recommended to me by a good friend a while back, who insisted I purchase my own copy because he couldn't stand to part - even temporarily - with his. So I did. Maybe a month later, co-author Sir Roger Penrose spoke at a local university and I was fortunate enough to see him, as well as have my very untouched copy of The Nature of Space and Time signed by him. Only recently did I read it, and I'd be lying

if I said I could comprehend more than half on my own.

Reading this book, more a collection of expository scientific essays than anything else, worked itself out into a research project for me; every chapter was organized by subtopics or sub-processes that required a considerable deal of Wikipedia look-ups on my end to keep up with the content (which, by the way, must, must, must be read in order). The back-and-forthness of it, however, did pay off in the end in that if someone asked me, "What the hell is 'spacetime' anyway?" I could explain to them (though not nearly as eloquently as Hawking or Penrose--it's a start, right?) the relationship between theoretical "space," physical space and the effect that they have on time and its perception. The Nature of Space and Time sparked in my interest in reading more on theoretical physics, and I'd quickly recommend the book to anyone with a shared interest who 1) has a PhD or 2) doesn't mind three hours plus of research per fifty lines of text.

Larka Fenrir says

"Io non chiedo che una teoria corrisponda alla realtà perchè non so quale sia questa realtà."
Stephen Hawking

I momenti più belli passati leggendo questo dibattito tra Stephen Hawking e Roger Penrose, dibattito avvenuto nel 1994 all'Isaac Newton Institute for Mathematical Sciences dell'Università di Cambridge:

1. ...ma almeno è in italiano?
 2. Qualcosa capirò, tra tutte queste formule e leggi date per scontate...
 3. Nope.
 4. NOPE.
 5. Lo rileggerò quando sarò meno capra...
 6. *arrivata a pagina 130* "Dovrò introdurre un po' di notazione bispinoriale. È a questo punto, di solito, che ci si comincia a confondere[...]" (Penrose) *risata ad alta voce. Continua. Isterica*
 7. Sì, ok, però è da metà libro che trascinate 'sto gatto moribondo di Schrödinger perchè nessuno dei due vuole darla vinta all'altro riguardo ai vostri differenti approcci in merito. Siamo alla penultima pagina. Anche il curatore del libro, nell'ultima sezione dedicata alle domande rivolte ai due fisici, taglia una domanda (*indovinate un po' quale*) scrivendo "Una domanda confusa ancora sul gatto. Roger Penrose rispiega il problema del gatto." Inutile dire che l'ho letto in tono esasperato. *Let it go, Let it gooooo~* (e mi sento in dovere di dire che *odio Frozen*, ma a quel punto il cervello andava per i fatti suoi).
-

Artemis Fowl says

We can understand the cosmos ? Will we ever find a general pattern by which explain what surrounds us ? Relativity and modern quantum theory will never get to a unification ? Think about the cosmos in terms of how much is the right way ? Why time flows in only one direction ? Stephen Hawking and Roger Penrose have charged with the daunting task of being able to give some clarification and some certainty about questions of this magnitude by comparing their ideas and reflections on cosmology, quantum theory and general relativity . For those in the industry is definitely a book to read, but it is within the reach of even the most avid reader of popular science books , built in a style never boring and gradually building a scientific language that leads the reader to understand even the most modern of problems of the universe .

Mohamed al-Jamri says

???? ???? ???? ?????? ???? ???? ?????? ?????????? ???? ?? ?????? ???? ???? ?????????? ????? ?????? ?????? ?????? ??????????
????? ?????? ?????? ?????????? ?????????? ???? ?????????

??? ????? ?? ??????? ?? ?? ??????? ?????? ??????? ?????????? ?????????? ???? ???? ?????? ?? ?????? ??? ???? ???? ?????? ???????
?? ??? ?????? ??? ??? ?????????? ??? ?????? ??? ??? ?????????? ?????????? ?????? ?? ??? ?? ?????? ?????????? ?????????? ??????????
????? ??? ?????? ?? ?????? ??????????.

Ryan says

Considerably more technical than either Hawking or Penrose's lay material (A Brief History of Time etc.) If you're seeking an introduction to the controversy behind Hawking's quantum gravity speculations (Hawking radiation, the no-hair theorem) then this is a good start. Is quantum information lost in black hole evaporation? There are still no solid answers to the questions posed here.

Tanya says

Some of this information is dated, which is to be expected reading it so long after it was written. I could follow most of the math, but was disappointed by the lack of variable definition. Penrose's writing was much more clear than Hawking's and I believe I'll search out some of his writing on the topic the next time I approach this subject.

Manuel Antão says

If you're into stuff like this, you can read the full review.

Shut the Fuck Up and Calculate (Or Not): "The Nature of Space and Time" by Stephen Hawking and Roger Penrose

"I have emphasized what I consider the two most remarkable features that I have learned in my research on space and time: (1) that gravity curls up space-time so that it has a beginning and an end; (2) that there is a deep connection between gravity and thermodynamics that arises because gravity itself determines the topology of the manifold on which it acts".

In "The Nature of Space and Time by Stephen Hawking and Roger Penrose" by Stephen Hawking in the lecture "Quantum Cosmology"

"We should think of twistor space as the space in terms of which we should describe physics."

In "The Nature of Space and Time" by Stephen Hawking and Roger Penrose by Roger Penrose in the lecture

"The Twistor View of Spacetime"

"These lectures have shown very clearly the difference between Roger and me. He's a Platonist and a positivist. He's worried that Schrödinger's cat is in a quantum state, where it is held alive and held dead. He feels that can't correspond to reality. But that doesn't bother me. I don't demand that a theory correspond to reality because I don't know what it is. Reality is not a quality you can test with litmus pap. All I'm concerned with is that the theory should predict the results of measurements. Quantum theory does this very successfully. It predicts that the result of an observation is either that the cat is alive or that it is dead. It is like you can't be slightly pregnant: you either are or you aren't."

In "The Nature of Space and Time" by Stephen Hawking and Roger Penrose by Stephen Hawking in the lecture "The Debate"

Can I write a review on such a book? Hawking and Penrose... It's staggering...I don't even know what day the mailman comes...After having re-read this oldie after Hawking's passing, I'd say it depends on where you are in the universe, whether you're on/near some sizeable object (of mass), its rotation, distance from other masses, or whether you live in my neck of the woods...

If you're into Physics, and Quantum Mechanics in particular, read on.

Wanyoung Kim says

Lots of diagrams. Has a lot of loaded philosophical statements that were useful when writing a thesis. Helps to explain singularity, cosmic censorship, etc.
