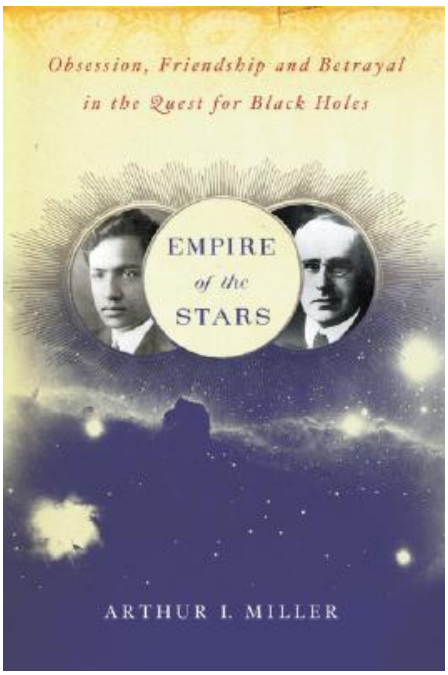

Empire of the Stars: Obsession, Friendship and Betrayal in the Quest for Black Holes

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In August 1930, on a voyage from Madras to London, a young Indian looked up at the stars and contemplated their fate. Subrahmanyan Chandrasekhar--Chandra, as he was called--calculated that certain stars would suffer a strange and violent death, collapsing to virtually nothing. This extraordinary claim, the first mathematical description of black holes, brought Chandra into direct conflict with Sir Arthur Eddington, one of the greatest astrophysicists of the day. Eddington ridiculed the young man's idea at a meeting of the Royal Astronomy Society in 1935, sending Chandra into an intellectual and emotional tailspin--and hindering the progress of astrophysics for nearly forty years.
Empire of the Stars is the dramatic story of this intellectual debate and its implications for twentieth-century science. Arthur I. Miller traces the idea of black holes from early notions of "dark stars" to the modern concepts of wormholes, quantum foam, and baby universes. In the process, he follows the rise of two great theories--relativity and quantum mechanics--that meet head on in black holes. Empire of the Stars provides a unique window into the remarkable quest to understand how stars are born, how they live, and, most portentously (for their fate is ultimately our own), how they die.
It is also the moving tale of one man's struggle against the establishment--an episode that sheds light on what science is, how it works, and where it can go wrong. Miller exposes the deep-seated prejudices that plague even the most rational minds. Indeed, it took the nuclear arms race to persuade scientists to revisit Chandra's work from the 1930s, for the core of a hydrogen bomb resembles nothing so much as an exploding star. Only then did physicists realize the relevance, truth, and importance of Chandra's work, which was finally awarded a Nobel Prize in 1983.
Set against the waning days of the British Empire and taking us right up to the present, this sweeping history examines the quest to understand one of the most forbidding phenomena in the universe, as well as the passions that fueled that quest over the course of a century.

Empire of the Stars: Obsession, Friendship and Betrayal in the Quest for Black Holes Details

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Quest for Black Holes Arthur I. Miller

From Reader Review Empire of the Stars: Obsession, Friendship and Betrayal in the Quest for Black Holes for online ebook

Converse says

Subrahmanyan Chandrasekhar (nicknamed Chandra) in 1930 discovered that stars exceeding a certain mass would evolve into a black hole. This solution seemed preposterous to the leading astrophysicist of the time Arthur Eddington, who publicly scorned the idea. Chandra went on to other topics in astrophysics, only to see the idea revived several decades later. He was awarded the Nobel Prize in 1983 for his pioneering work.

Raghu says

This book is a sort of history of Astrophysics in the 20th century, centered on a seminal theory proposed by Dr. Subramanyam Chandrasekhar in 1930, which later came to be the theory of black holes. But the young 21-year old Indian is ridiculed publicly in Cambridge by the eminent Sir Arthur Eddington. This ridicule damages Chandra's psyche for good, for life in fact. The book is the story of intrigue, racism in scientific circles in Britain in the mid 20th century and its effect on Chandra. Later, Chandra moves to the University of Chicago and eventually is awarded the Nobel prize the mid 1980's for his work fifty years earlier. The book is also partially a biography of Dr.Chandra.
Chandra, though an astrophysicist, was primarily a mathematician who applied it to astrophysics. He loved the beauty inherent in Maths. There are some interesting quotes in the book. The young writes to his father at age 21:'...I am ashamed to say that I am 21. So much time has passed but so little done.' And this was written after he made his first proposal of the path-breaking theory of blackholes!
The book is a somewhat slow read. But for people interested in blak holes and also the life story of Dr.Chandra, it is a worthy read. Incidentally, Dr.Chandrasekhar grew up in the Madras suburb of Triplicane, where I also grew up and he attended the Hindu High School, which was also my high school! Of course, the identity ends there!

Raj says

This pop science book tells the story of the life cycle of stars and the discovery of black holes. In particular, it focusses on the feud between Sir Arthur Eddington and Subrahmanyan Chandrasekhar (Chandra). Chandra had concluded that white dwarves have a maximum mass, leading to the conclusion that a star above that mass would contract infinitely into a black hole. When he delivered a paper on this to the Royal Astronomical Society in 1935, Eddington subjected him to public humiliation and ridicule, which almost broke Chandra.

In the first part, the book goes into the background of the two protagonists and the events that led to the showdown. The second continues on from that, but takes a wider view at the science of the life cycle of stars and how it was gradually unravelled, leading eventually to the rediscovery of the black hole theory. The third part deals with Chandra's later life, revealing a man who was embittered by his early showdown with

Eddington, but one who still had a spark in him and went on to win every major science award going.

I enjoyed this book a lot, both for its biographical information, and the science. I have some elementary astronomy background which may have helped, but it seemed clearly laid out. Also, it was nice to see names which I knew off through equations and laws actually turning out to have real people behind them :-).

Brooke says

This book inspired me to go into astrophysics for my bachelor's degree. At the time, I was trying to decide between biotechnology and physics, and this book helped push me over the edge. Not only is it about the science community eventually accepting black holes as a reality, it also is a treasure trove of information about several leading scientists. It is very informational, but not so much so that the reader feels overwhelmed. I would recommend it to anyone with a love for science and history.

Renee says

Portrait of the life and times of this less known modern physicist. Chandra was ostracized by the english academy for a theory later proven true. The theory, placed a limit on the mass of white dwarf stars, beyond which suggests implosion and the formation of black holes.

Good overview of major developments in Astrophysics, and quantum physics. Portraiture seems limited by source material, for instance his romantic life glossed over and romanticized.

Always good to read about the magic of physics and the poetry of its language: for example a 'singularity'being an infinite thing.

Prasanna says

This book can be best characterized as a "pop" science/astronomy book about the struggles of Chandrasekhar despite the rejection of his theory by Sir Arthur Eddington in 1935. This book does a great job of capturing the process of science and perhaps, some of the ego bruising arguments that sometimes hinder progress. In 1935 Eddington felt that his life's work was being destroyed by Chandrasekhar's theory on Black holes and attacked Chandra's work - as he often did to theories he didn't approve, Milne and Jeans being two of his victims. Chandra in many ways took it too hard for not getting awarded Nobel earlier. In some ways, rest of his life just revolved around events of the day he presented his seminal paper at Royal Society.
This is also the story of the coming together of various fields of Science and attacking a problem together, or coming to same conclusions from different angles as it often happens. I found the second part of the book most fascinating where physicists started looking at the nature of stars and studies in Astrophysics to make bombs. This had a net positive effect back to the Astrophysics community as a lot of theoretical problems could be backed by empirical understandings form the numerous tests. And, it ultimately helped strengthen the mathematical treatise that Chandrasekhar had written many years back.
It's somewhat of a slow read but definitely interesting.

Sarah says

Not enough about the obsession, friendship, racism & changing culture. Not even enough about Chandra. Too much about the science which would have been fine if it was clearer.

Chris Backhouse says

Contra the billing only about the first third of this is Chandra and Eddington. The rest is the standard story of black holes and the H bomb. And we don't learn anything new because all of Eddington's correspondence was destroyed.

Go read Black Holes and Time Warps instead.

Arvind Balasundaram says

This book tells a fascinating tale in the life and work of Indian-American Nobel Laureate, Subrahmanyan Chandrasekhar, or Chandra as he came to be known. Beginning with his early childhood in Madras, the book is primarily focused around the personalities and politics involved in Chandra's brilliant discovery surrounding the death of stars. In 1935, Chandra postulated that for a star of small mass, the white dwarf stage is an initial step to its eventual extinction. However, for stars of larger masses, specifically greater than 1.4 times the mass of our own Sun (now known as the Chandrasekhar Limit), stars bypass this stage. The gravitational pull inward is greater than the radiation pressure that can resist this inward gravitational pull, leaving Chandra to conclude that this leaves one "speculating on other possibilities". This thinking was contrary to the theories of his contemporaries and colleagues at Cambridge, notably Arthur Eddington, who dismissed the possibility of the infinite regress of collapsing stars into singularity as just "stellar buffoonery", which was unacceptable. Chandra's ideas went a-begging, and this encounter with Eddington sent him into a lifelong depression, that even his eventual Nobel Prize and numerous awards could not heal. It also left Chandra feeling that as an astrophysicist he was never given the credit for his contributions as a theoretical physicist.
With advancements in computing and new discoveries in quantum and particle physics, the viability of Chandra's ideas were rediscovered. In the nuclear arms race, the efforts on the Manhattan project and the super hydrogen bomb led to a greater understanding of fusion and fission collisions among fundamental atomic particles and gases. These discoveries led to independent confirmation of Chandra's ideas. Advances in radio astronomy also led to the discovery of supernovae, quasars, pulsars, neutron stars and eventually to black holes in our own galaxy.
This book is a remarkable read of the life of a scientific personality, his genius and flaws, the environment in which he worked, the racism and egos of his colleagues, and ultimately a testament to how Nature sometimes replicates patterns in human thinking and inference, summed up elegntly in Chandra's own words:
"In my entire scientific life, extending over forty-five years, the most shattering experience has been the realisation that [Kerr's] exact solution of Einstein's equations of general relativity provides the absolutely exact representation of untold numbers of massive black holes that populate the universe. This "shuddering before the beautiful," this incredible fact that a discovery by a search after the beautiful in mathematics should find its exact replica in Nature, persuades me to say that beauty is that to which the human mind

responds at its deepest and most profound." How wonderful this is!

Initially NO says

I was in a café reading this book, when the waitress asked what I was reading. I showed her the cover. She said, ‘I’ve heard of it, but I haven’t read it.’

I said nothing in reply to this. But what I really wanted to say was, ‘I doubt it. You’re probably thinking of something far more exciting.’

The subtitle for this book reads: friendship, obsession and betrayal in the quest for black holes.

I think the premise promises more than it delivers. I think it could be a really fascinating book, but it’s not. It isn’t written in a friendly inviting way. It’s written as a ‘history study’. Not much science is included, it’s a biography on the scientists. Which could be good. Just that, this writing style had no grip. It’s dull, when I’m someone who finds astronomy fascinating. Where is the entertainment? Or, what the hell else am I supposed to get from it? What? Learn the facts and figures about who the scientists married and had biffos with? I don’t think so. If a book can’t make biographical material interesting, then the writer is a cataloguer rather than a creative writer who can put a bit of imaginative description in there to give a sense of place and time, beyond the telling of dry facts. Miller just couldn’t make the people he studied come alive. And as far as a plot is concerned, well it’s thread bare, if it is there.

So very, very, very disappointed in this book. I’ve read half of it, so I’ve given it more than enough of a chance to show something worth following through with.

Stephie says

I found this book to be an interesting insight in the the development of our understanding of the stars- how they live, how they shine, how their size affects their death, and the eventual acknowledgement of Black Holes.
It follows a sort of biographical style, focusing on Chandrasekhar and his development in the Scientific community, the racial struggles he came across and how these affected both his scientific and personal life.

I enjoyed reading this book immensely and would recommend it if the reader is interested in the history of scientific development, however, I would not recommend it if the reader is after one of two things; 1) A book of pure physics and mathematics, or, 2) A pure biography of Chandrasekhar.

Kim Zinkowski says

B. Diamond Star!

Beatrice says

I found it extremely interesting even though I only understood about 80% of it.
