"Physics Collection"

Joshua Roebke

Bibliography List

Barrow, John D. (1995). The Artful Universe. Clarendon Press, Oxford.
The musings of an astrophysicist on virtually every subject one could possibly think of: art, beauty and aesthetics, music, mythology, philosophy, language, computers, etc. The impetus for an exposition on such diverse subject matter is the author's belief that each of the everyday experiences and perceptions of humans may be derived from the underlying physical principles which physics attempts to describe.

Barrow, John D. & Tipler, Frank. (1986). The Anthropic Cosmological Principle. Oxford University Press.
A wonderfully enlightening book which examines man's place in the universe from a physical point of view. This famous book utilizes many contemporary ideas of physics, such as Quantum Theory, Relativity, and the four fundamental forces of nature, to show that human existence could not have been a purely fortuitous event.

Bohm, David. (l951). Quantum Theory. Dover Publications, New York.
A seminal work on the foundations of Quantum Mechanics. This book revolutionized the manner in which physicists conceive of the Quantum world, by spawning the formulation known as Bohmian Mechanics.

Bohm, David and Hiley, Basil. (1990). The Undivided Universe. Routledge, NewYork.
Another good book on the foundations and implications of Quantum Physics. In this somewhat technical book, the authors put forward the notion of an "undivided universe" or, in other words, a universe in which all things are causally related due to the nature of the authors' conception of certain Quantum phenomena.

Calder, Nigel. (1979). Einstein's Universe. New York: Wings Books.
A highly readable account of the work and impact of Albert Einstein. Written to mirror a BBB television special of the same name, the author readily accomplishes his goal of "Making Relativity plain."

Capra, Fritjof. (1975). The Tao of Physics. Bantam Books.
A physicist's attempt to converge the primary ideas of Western science with Eastern Religion and mysticism. A highly enjoyable and interesting book.

Casper, Barry & Noer, Richard. (1972). Revolutions in Physics. W.W. Norton Company.
An easy to follow textbook with a comprehensive introduction to Newtonian physics and the Special Theory of Relativity. Written by two professors from Carleton College it is an enjoyable book due with numerous anecdotes and historical notes scattered throughout the book.

Davies, Paul C. (1983). God & the New Physics. New York: Simon and Schuster.
An impressive tour de force which analyzes the implications of modern physics as to the possibility of God's existence. This thought provoking book reviews many of the contemporary thoughts on God of both physicists and philosophers alike, but the author's own ideas are the most intriguing and most easy to follow. This is one of the most famous of all popular books on the subject.

Davies, Paul C. (editor). (1989). The New Physics. Cambridge University Press.
An all encompassing introduction to the ideas of modern physics covering everything from Astrophysics to Quantum Field Theories in a textbook format. Each chapter is written by one of the leading researchers in the field as a semi-nontechnical introduction. Wonderfully broad and easy to follow.

Davies, Paul C. (1994). The Last Three Minutes. Basic Books.
A short, concise book which examines what will most likely be the ultimate fate of the universe, heat death. Relying on the physics of Thermodynamics, Davies, the most prolific of all popular physics writers, introduces an interesting account of what is in store for the world.

Davies, Paul C. (1995). About Time: Einstein's Unfinished Revolution. New York: Simon and Schuster.
A book that has been a long time coming about the implications of Einstein's General Theory of Relativity on time. The book examines the possibilities of time travel, the passage of time, and the beginning of the universe in depth and makes some very interesting conjectures as to what the next breakthrough may be in physics.

Einstein, Albert. (1961). Relativity: The Special and the General Theory. Crown Trade Paperbacks.
Who else could write a better popular account of the works of Einstein than Einstein himself? This is perhaps the most easy to follow introduction to Relativity with very little mathematics, but what else could be expected from the greatest mind of the twentieth century, if not all time.

Feynman, Richard. (1960. The Feynman Lectures on Physics (Volumes I- III). AddisonWesley.The ultimate introduction to physics. Every conceivable area of physics is covered in this three volume series based lectures delivered by Feynman to an introductory course at CalTech. The volumes are informative and full of anecdotes from one of the twentieth century's greatest thinkers.

French, A. P. (1965). Newtonian Mechanics. W.W. Norton and Company.
Wonderful introduction to the work of Newton and the classical methods in physics which he helped to develop. The book is rife with examples and applications, and is written as a self contained introduction to introductory physics based on classes delivered at MIT.

Hawking, Stephen. (1988). A Brief History of Time. Bantam Books.
This book is by far the most popular book about physics appearing on the New York Times best sellers list for over 53 weeks. The book is both broad in its scope and comprehensible at the same time. A must for any collection and everyone who just wants to know about the world in which we live, from one of the most famous physicists alive today.

Hawking, Stephen. (1994). Black Holes and Baby Universes and Other Essays. Bantam Books.Another of Hawking's best sellers, this book is a collection of the many lectures he has given in the past years on such subjects ranging from his bout with Lou Gehrig's Disease to his beliefs on the beginning of the universe. A good book for those that have read A Brief History of Time.

Hawking, Stephen. (1996). The Illustrated A Brief History of Time. Bantam Books.
A hardcover and updated edition to Hawing's best selling book with a brand new foreword and chapter on time, as well as over 200 additional computer enhanced images.

Kaku, Michio. (1994). Hyperspace Oxford University Press.
Another great popular book about the scope of modern physics, yet this book sticks out in its lengthy discussion on String Theory and the Theory of Everything. The author chronicles his own personal efforts to find the ever elusive Theory of Everything, and does a remarkable job of making this esoteric subject both interesting and understandable.

Lightman, Alan. (1993). Einstein's Dreams. Warner Books.
A great fictional account of the early life of Einstein, focusing on the years when he developed his theory of Special Relativity. The book goes into the possible musings of Einstein which lead him to develop a new theory of time and space. I highly recommend this novel.

Menzel, Donald H. (1961). Mathematical Physics. Dover Publications.
Highly advanced mathematical discussion of physics which is not for the beginner. Covers mostly the mathematics of General Relativity, Magnetism, Electricity, and Quantum Physics.

Misner, C., Thorne, K., and Wheeler, J. (1973). Gravitation. W.H. Freeman and Company.
The ultimate source book on General Relativity and Gravity in general. An introduction to the work of Einstein and others which lead to the discovery of black holes, quasars, and other interesting phenomena. The authors are leading researchers in the field, and have compiled the textbook for those interested in embarking on a quest to understand the universe.

Omnes, Roland. (1999). Understanding Quantum Mechanics. Princeton University Press.
A philosophical introduction to the interpretations of Quantum Mechanics, in which an entirely new theory is posited based on deficiencies of other current models. This book is

a much more condensed and readable version of a similar book by the author, who is one of the leading researchers into Quantum phenomena today.

Pagel, Heinz R. (1986). Perfect Symmetry: The Search for the Beginning of Time. Bantam
Books.
A mostly historical book which looks at the pursuit to know the beginning of time. Broken into three sections; one on Astronomy, one on Relativity, and one on Quantum Mechanics, the book is replete with useful information and "wild ideas."

Pais, Abraham. (1982). Subtle is the Lord... The Science and the Life of Albert Einstein. Oxford University Press.
This book is the most highly regarded biographical account of Albert Einstein by a man who knew him well. A highly detailed chronicle of the life of this century's greatest intellectual as well as a highly mathematical examination of his work. This book is the most comprehensive and fascinating of its kind.

Peat, F. David. (I987). Synchronicity: The Bridge Between Matter and Mind. Bantam Books.
A fascinating look into the Quantum Theory and what it might mean to the human mind and consciousness. The author examines the idea of Synchronicity, created by the psychologist Carl Jung, to discover if there is more to coincidence and luck from a physical standpoint.

Penrose, Roger. (1991). The Emperor's New Mind. Penguin Books.
A book which attempts to answer the question of how the mind works and whether the idea of artificial intelligence is feasible, utilizing the ideas of physics and mathematics. This author offers a comprehensive review of the physical advances that this century has seen before ever going into his argument and is quite good in that respect. The author's ideas and research are at the forefront of its kind.

Rothman, Tony. (1995). Instant Physics. New York: Byron Preiss Books.
This book offers a very basic introduction to physics which can be easily followed by virtually everyone. There is very little mathematics involved in this book which is instead full of explanation and anecdotes. This is a very good book for anyone who wants to know the very basics.

Stevens, Charles F. (1995). The Six Core Theories of Modern Physics. MIT Press.
A wonderful book which offers a mathematical review of all the key areas of modern physics. There is a wonderful tutorial on the mathematics employed by physicists before there is any mention of a single physics equation. This book, however, is geared towards those who have already seen the material and want a quick review.

Thorne, Kip S. (194). Black Holes and Time Warps: Einstein's Outrageous Legacy. W. W. Norton Company.
Though the title is a tittle misleading, this is the best book available on the history of

Black Hole research. The discussion is in depth and informative, from Isaac Newton to Stephen Hawking, with a few pages on Time Warps. Most of the book centers on the "Golden Era" of Black holes in the 1950's. Though the esoteric subject covered in the book sounds more like science fiction at time than science fact, it is easy to follow and remarkably captivating.

Torretti, Roberto. (1999). The Philosophy of Physics Cambridge University Press.
A great book on the interpretation and philosophical importance of virtually every area of Physics. The book begins with an introduction to classical methods of philosophical investigation and then quickly proceeds into topics as diverse as Newtonian Physics, Quantum Mechanics, General Relativity, and String Theory.

Weinberg, Steven. (1992). Dreams of a Final Theory New York; Pantheon Books.
The author, famous as a Nobel laureate for his work on the Electroweak theory, has written a wonderful book about the physicists' quest for the Theory of Everything. Using his own work and the work of others, he describes what such a theory would entail and he also discusses the feasibility that any theory which describes all of nature wiIl ever be found. A very easy to read and informative book.

Wheeler, John A. (1998). Geons, Black Holes, and Quantum Foam (A Life in Physics).
W. W. Norton and Company.
The autobiography of the man who coined the term "black hole" and was one of the twentieth century's greatest physicists. It is a great book, and a refreshing way of finding out just why physicists do what they do, straight from the source.