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Understanding Thermodynamics - H.C. Van Ness 2012-06-08

Clear treatment of systems and first and second laws of thermodynamics features informal language, vivid and lively examples, and fresh perspectives. Excellent supplement for undergraduate science or engineering class.

[Dynamics of Fluids in Porous Media](#) - Jacob Bear 1988-01-01

This is the definitive work on the subject by one of the world's foremost hydrologists, designed primarily for advanced undergraduate and graduate students. 335 black-and-white illustrations. Exercises, with answers.

Understanding Einstein's Theories of Relativity - Stan Gibilisco 1991-01-01

Clear, concise exposition of both the special and general theories of relativity, intended for nonscientific readers with a knowledge of high school math. Topics include simultaneity, time dilation, length contraction, the possibility of travel to a distant star, non-Euclidean geometries, black holes, and the structure of the universe. 158 illustrations.

Relativity and Geometry - Roberto Torretti 2014-05-20

Relativity and Geometry aims to elucidate the motivation and significance of the changes in physical geometry brought about by Einstein, in both the first and the second phases of relativity.

The book contains seven chapters and a mathematical appendix. The first two chapters review a historical background of relativity. Chapter 3 centers on Einstein's first Relativity paper of 1905. Subsequent chapter presents the Minkowskian formulation of special relativity. Chapters 5 and 6 deal with Einstein's search for general relativity from 1907 to 1915, as well as some aspects and subsequent developments of the theory. The last chapter explores the concept of simultaneity, geometric conventionalism, and a few other questions concerning space time structure, causality, and time.

The Exact Sciences in Antiquity - Otto Neugebauer 1969-01-01

Based on a series of lectures delivered at Cornell University in the fall of 1949, and since revised, this is the standard non-technical coverage of Egyptian and Babylonian mathematics and astronomy, and their transmission to the Hellenistic world. Entirely modern in its data and conclusions, it reveals the surprising sophistication of certain areas of early science, particularly Babylonian mathematics. After a discussion of the number systems used in the ancient Near East (contrasting the Egyptian method of additive computations with unit fractions and Babylonian place values), Dr. Neugebauer covers Babylonian tables for numerical computation, approximations of the

square root of 2 (with implications that the Pythagorean Theorem was known more than a thousand years before Pythagoras), Pythagorean numbers, quadratic equations with two unknowns, special cases of logarithms and various other algebraic and geometric cases. Babylonian strength in algebraic and numerical work reveals a level of mathematical development in many aspects comparable to the mathematics of the early Renaissance in Europe. This is in contrast to the relatively primitive Egyptian mathematics. In the realm of astronomy, too, Dr. Neugebauer describes an unexpected sophistication, which is interpreted less as the result of millennia of observations (as used to be the interpretation) than as a competent mathematical apparatus. The transmission of this early science and its further development in Hellenistic times is also described. An Appendix discusses certain aspects of Greek astronomy and the indebtedness of the Copernican system to Ptolemaic and Islamic methods. Dr. Neugebauer has long enjoyed an international reputation as one of the foremost workers in the area of premodern science. Many of his discoveries have revolutionized earlier understandings. In this volume he presents a non-technical survey, with much material unique on this level, which can be read with great profit by all interested in the history of science or history of culture. 14 plates. 52 figures.

Fads and Fallacies in the Name of Science - Martin Gardner 2012-05-04

Fair, witty appraisal of cranks, quacks, and quackeries of science and pseudoscience: hollow earth, Velikovsky, orgone energy, Dianetics, flying saucers, Bridey Murphy, food and medical fads, and much more.

Echo of the Big Bang - Michael D. Lemonick 2003

Telling the full story of Microwave Anisotropy Probe (MAP) and its surprising revelations--and the only book written with MAP's results in hand--"Echo of the Big Bang" is both a personal and a scientific tale of discovery. 6 illustrations. [Relativity Visualized](#) - 1985

Perfect for those interested in physics but who are not physicists or mathematicians, this book makes relativity so simple that a child can understand it. By replacing equations with

diagrams, the book allows non-specialist readers to fully understand the concepts in relativity without the slow, painful progress so often associated with a complicated scientific subject. It allows readers not only to know how relativity works, but also to intuitively understand it.

Relativity and Geometry - Roberto Torretti 1996-01-01

Early in this century, it was shown that the new non-Newtonian physics -- known as Einstein's Special Theory of Relativity -- rested on a new, non-Euclidean geometry, which incorporated time and space into a unified "chronogeometric" structure. This high-level study elucidates the motivation and significance of the changes in physical geometry brought about by Einstein, in both the first and the second phase of Relativity. After a discussion of Newtonian principles and 19th-century views on electrodynamics and the aether, the author offers illuminating expositions of Einstein's electrodynamics of moving bodies, Minkowski spacetime, Einstein's quest for a theory of gravity, gravitational geometry, the concept of simultaneity, time and causality and other topics. An important Appendix -- designed to define spacetime curvature -- considers differentiable manifolds, fiber bundles, linear connections and useful formulae. Relativity continues to be a major focus of interest for physicists, mathematicians and philosophers of science. This highly regarded work offers them a rich, "historico-critical" exposition -- emphasizing geometrical ideas -- of the elements of the Special and General Theory of Relativity.

Learn Chess from the Greats - Peter J. Tamburro 2016-11-16

Invaluable instructions for chess players at all levels includes elementary ideas for immediate practical use; how to attack, featuring tactics of Fischer, Keres, Alekhine, and other masters; challenging chess problems; and 60 complete games by Blackburne, Marshall, Spielmann, Tartakower, and other immortals.

Introduction to the Theory of Relativity - Peter Gabriel Bergmann 1976-01-01

Comprehensive coverage of special theory (frames of reference, Lorentz transformation, more), general theory (principle of equivalence, more) and unified theory (Weyl's gauge-invariant geometry, more.) Foreword by Albert Einstein. *Alchemy* - Eric John Holmyard 1990-01-01

Alchemy is thought to have originated over 2000 years ago in Hellenic Egypt, the result of three converging streams: Greek philosophy, Egyptian technology and the mysticism of Middle Eastern religions. Its heyday was from about 800 A.D. to the middle of the seventeenth century, and its practitioners ranged from kings, popes, and emperors to minor clergy, parish clerks, smiths, dyers, and tinkers. Even such accomplished men as Roger Bacon, Thomas Aquinas, Sir Thomas Browne and Isaac Newton took an interest in alchemical matters. In its search for the "Philosopher's Stone" that would transmute base metals into silver and gold, alchemy took on many philosophical, religious and mystical overtones. These and many other facets of alchemy are explored with enormous insight and erudition in this classic work. E. J. Holmyard, a noted scholar in the field, begins with the alchemists of ancient Greece and China and goes on to discuss alchemical apparatus, Islamic and early Western alchemy; signs, symbols, and secret terms; Paracelsus; English, Scottish and French alchemists; Helvetius, Price, and Semler, and much more. Ranging over two millennia of alchemical history, Mr. Holmyard shows how, like astrology and witchcraft, alchemy was an integral part of the pre-scientific moral order, arousing the cupidity of princes, the blind fear of mobs and the intellectual curiosity of learned men. Eventually, however, with the advent and ascension of the scientific method, the hopes and ideas of the alchemists faded to the status of "pseudo-science." That transformation, as well as alchemy's undeniable role as a precursor of modern chemistry, are brilliantly illuminated in this book. Students of alchemy, chemistry, the history of science, and the occult, plus anyone interested in the origin and evolution of one of mankind's most enduring and influential myths, will want to have a copy of this masterly study.

Concepts of Mass in Classical and Modern Physics - Max Jammer 1997-01-01

Rigorous, concise, and provocative monograph analyzes the ancient concept of mass, the neoplatonic concept of inertia, the modern concept of mass, mass and energy, and much more. 1964 edition.

The Great Physicists from Galileo to Einstein - George Gamow 1988-10-01

Outstanding text by one of the 20th century's

foremost physicists dramatically explains how the central laws of physical science evolved, from Pythagoras' discovery of frequency ratios in the 6th century BC to today's research on elementary particles. Includes fascinating biographical data about Galileo, Newton, Huygens, Einstein and others. 136 illustrations.

Temperatures Very Low and Very High - Mark Waldo Zemansky 1981-01-01

The concise study of temperature and its extremes is designed to provide physics students, laymen and the general reader a greater understanding into the total meaning of "temperature" as a concept.

The Fourth Dimension - Rudy von Bitter Rucker 1985

A detailed description of what the fourth dimension would be like.

Space, Time, Matter - Hermann Weyl 1952-01-01

"The standard treatise on the general theory of relativity." — Nature "Whatever the future may bring, Professor Weyl's book will remain a classic of physics." — British Journal for Philosophy and Science Reflecting the revolution in scientific and philosophic thought which accompanied the Einstein relativity theories, Dr. Weyl has probed deeply into the notions of space, time, and matter. A rigorous examination of the state of our knowledge of the world following these developments is undertaken with this guiding principle: that although further scientific thought may take us far beyond our present conception of the world, we may never again return to the previous narrow and restricted scheme. Although a degree of mathematical sophistication is presupposed, Dr. Weyl develops all the tensor calculus necessary to his exposition. He then proceeds to an analysis of the concept of Euclidean space and the spatial conceptions of Riemann. From this the nature of the amalgamation of space and time is derived. This leads to an exposition and examination of Einstein's general theory of relativity and the concomitant theory of gravitation. A detailed investigation follows devoted to gravitational waves, a rigorous solution of the problem of one body, laws of conservation, and the energy of gravitation. Dr. Weyl's introduction of the concept of tensor-density as a magnitude of quantity (contrasted

with tensors which are considered to be magnitudes of intensity) is a major step toward a clearer understanding of the relationships among space, time, and matter.

Science and Hypothesis - Henri Poincaré
1952-01-01

Nontechnical essays on hypothesis in physical theory, concept of number, magnitude, force, intuition vs. logic, more. Chapters include "On the Nature of Mathematical Reasoning," "Mathematical Magnitude and Experiment," "Non-Euclidean Geometries," "Space and Geometry," "Experiment and Geometry," "The Classical Mechanics," "Energy and Thermodynamics," "Hypotheses in Physics," and "The Calculus of Probabilities."

Mathematics of Relativity - George Yuri Rainich
2014-08-20

Concise treatment, based on ideas of Einstein and Minkowski, geared toward advanced undergraduates and graduate students of physics. Topics include old physics, new geometry, special relativity, curved space, and general relativity. 1950 edition.

From Alchemy to Chemistry - John Read
1995-01-01

Broad, humanistic treatment focuses on great figures of chemistry and ideas that revolutionized the science. Much on alchemy, also development of modern chemistry, atomic theory, elements, organic chemistry, more. 50 illustrations.

It's About Time - N. David Mermin 2009-07-06

In *It's About Time*, N. David Mermin asserts that relativity ought to be an important part of everyone's education--after all, it is largely about time, a subject with which all are familiar. The book reveals that some of our most intuitive notions about time are shockingly wrong, and that the real nature of time discovered by Einstein can be rigorously explained without advanced mathematics. This readable exposition of the nature of time as addressed in Einstein's theory of relativity is accessible to anyone who remembers a little high school algebra and elementary plane geometry. The book evolved as Mermin taught the subject to diverse groups of undergraduates at Cornell University, none of them science majors, over three and a half decades. Mermin's approach is imaginative, yet accurate and complete. Clear, lively, and

informal, the book will appeal to intellectually curious readers of all kinds, including even professional physicists, who will be intrigued by its highly original approach.

Introduction to Mathematical Philosophy - Bertrand Russell 1993-01-01

In the words of Bertrand Russell, "Because language is misleading, as well as because it is diffuse and inexact when applied to logic (for which it was never intended), logical symbolism is absolutely necessary to any exact or thorough treatment of mathematical philosophy." That assertion underlies this book, a seminal work in the field for more than 70 years. In it, Russell offers a nontechnical, undogmatic account of his philosophical criticism as it relates to arithmetic and logic. Rather than an exhaustive treatment, however, the influential philosopher and mathematician focuses on certain issues of mathematical logic that, to his mind, invalidated much traditional and contemporary philosophy. In dealing with such topics as number, order, relations, limits and continuity, propositional functions, descriptions, and classes, Russell writes in a clear, accessible manner, requiring neither a knowledge of mathematics nor an aptitude for mathematical symbolism. The result is a thought-provoking excursion into the fascinating realm where mathematics and philosophy meet — a philosophical classic that will be welcomed by any thinking person interested in this crucial area of modern thought.

Stars and Relativity - Ya. B. Zel'dovich
2014-06-10

Two of the greatest astrophysicists of the 20th century explore general relativity, properties of matter under astrophysical conditions, stars, and stellar systems. A valuable resource for physicists, astronomers, graduate students. 1971 edition.

Classical Mechanics - Herbert Charles Corben
1994-01-01

Applications not usually taught in physics courses include theory of space-charge limited currents, atmospheric drag, motion of meteoritic dust, variational principles in rocket motion, transfer functions, much more. 1960 edition."

The Whys of a Philosophical Scrivener - Martin Gardner 1999-08-21

The Whys of a Philosophical Scrivener

showcases Martin Gardner as the consummate philosopher, thinker, and great mathematician that he is. Exploring issues that range from faith to prayer to evil to immortality, and far beyond, Gardner challenges the discerning reader with fundamental questions of classical philosophy and life's greater meanings. Recalling such philosophers as Wittgenstein and Arendt, *The Whys of Philosophical Scrivener* embodies Martin Gardner's unceasing interest and joy in the impenetrable mysteries of life.

Experimental Researches in Electricity - Michael Faraday 2004-07-15

First published in three volumes from 1839 to 1855, this landmark work clearly discusses the inquiries that led to the author's development of the first dynamo and his establishment of the foundations of classical field theory. "The writing is interesting and the expositions are impressive." ? Florida Scientist. 1914 edition.

The Restless Universe - Max Born 2013-09-26

Highly readable introduction to modern physics, written by a Nobel laureate, develops general concepts of Newtonian mechanics and thermodynamics. Additional topics include the structure of the atom and nuclear physics.

[The Theory of Spinors](#) - Élie Cartan 2012-04-30

Describes orthogonal and related Lie groups, using real or complex parameters and indefinite metrics. Develops theory of spinors by giving a purely geometric definition of these mathematical entities.

Relativity Simply Explained - Martin Gardner 1997-01-01

One of the subject's clearest, most entertaining introductions offers lucid explanations of special and general theories of relativity, gravity, and spacetime, models of the universe, and more. 100 illustrations.

Undiluted Hocus-Pocus - Martin Gardner 2015-11-03

The autobiography of the beloved writer who inspired a generation to study math and science Martin Gardner wrote the *Mathematical Games* column for *Scientific American* for twenty-five years and published more than seventy books on topics as diverse as magic, religion, and *Alice in Wonderland*. Gardner's illuminating autobiography is a candid self-portrait by the man evolutionary theorist Stephen Jay Gould called our "single brightest beacon" for the

defense of rationality and good science against mysticism and anti-intellectualism. Gardner takes readers from his childhood in Oklahoma to his varied and wide-ranging professional pursuits. He shares colorful anecdotes about the many fascinating people he met and mentored, and voices strong opinions on the subjects that matter to him most, from his love of mathematics to his uncompromising stance against pseudoscience. For Gardner, our mathematically structured universe is undiluted hocus-pocus—a marvelous enigma, in other words. *Undiluted Hocus-Pocus* offers a rare, intimate look at Gardner's life and work, and the experiences that shaped both.

Meson Theory of Nuclear Forces - Wolfgang Pauli 2017-08-24

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[Charles S. Peirce, Selected Writings](#) - Charles S. Peirce 2012-08-28

Science, material, idealism, pragmatism, history of scientific thought. With Buchler's book, best way to approach notoriously cryptic philosopher. Features 24 selections including "The Place of Our Age in the History of Civilization."

[The Principle of Relativity](#) - Hendrik Antoon Lorentz 1923

Exploring the Moon Through Binoculars and Small Telescopes - Ernest H. Cherrington
2013-01-18

Informative, profusely illustrated guide to locating and identifying craters, rills, seas, mountains, other lunar features. Newly revised and updated with special section of new photos. Over 100 photos and diagrams. "Extraordinary delight awaits the amateur astronomer or teacher who opens this book." — The Science Teacher.

Simply Einstein: Relativity Demystified - Richard Wolfson 2003-11-17

With this reader-friendly book, it doesn't take an Einstein to understand the theory of relativity and its remarkable consequences. In clear, understandable terms, physicist Richard Wolfson explores the ideas at the heart of relativity and shows how they lead to such seeming absurdities as time travel, curved space, black holes, and new meaning for the idea of past and future. Drawing from years of teaching modern physics to nonscientists, Wolfson explains in a lively, conversational style the simple principles underlying Einstein's theory. Relativity, Wolfson shows, gave us a new view of space and time, opening the door to questions about their flexible nature: Is the universe finite or infinite? Will it expand forever or eventually collapse in a "big crunch"? Is time travel possible? What goes on inside a black hole? How does gravity really work? These questions at the forefront of twenty-first-century physics are all rooted in the profound and sweeping vision of Albert Einstein's early twentieth-century theory. Wolfson leads his readers on an intellectual journey that culminates in a universe made almost unimaginably rich by the principles that

Einstein first discovered.

Geometry, Relativity and the Fourth Dimension - Rudolf Rucker 2012-06-08

Exposition of fourth dimension, concepts of relativity as Flatland characters continue adventures. Topics include curved space time as a higher dimension, special relativity, and shape of space-time. Includes 141 illustrations.

Einstein's Theory of Relativity - Max Born
2012-05-23

Semi-technical account includes a review of classical physics (origin of space and time measurements, Ptolemaic and Copernican astronomy, laws of motion, inertia, more) and of Einstein's theories of relativity.

Our Universe - Jo Dunkley 2019-04-08

Jo Dunkley combines her expertise as an astrophysicist with her talents as a writer and teacher to present an elegant introduction to the structure, history, and enduring mysteries of the universe. Among the cutting-edge phenomena discussed are the accelerating expansion of the universe and the possibility that our universe is only one of many.

Harmonic Proportion and Form in Nature, Art and Architecture - Samuel Colman 2003-01-01

A treatise on the laws governing proportional form in both nature and the arts and sciences, this well-illustrated volume demonstrates how a design can captivate both the eye and the mind. Flowers and shells appear here, along with artistic creations, in a study of the similarity of their constructive principles.

Fads and Fallacies in the Name of Science - Martin Gardner 1957-06-01

Reviews fads, hoaxes, and cults propagated under the guise of being scientifically founded and proven