

Relativity Simply Explained

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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.
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.

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.

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.

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.

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.
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."
Lady Luck - Warren
Weaver 1982-01-01
Shows the applications
of probability theory in
science, business,
games, and everyday life
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.

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.

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.

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 Garner's unceasing interest and joy in the impenetrable mysteries of life.

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.

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
1957-06-01
Reviews fads, hoaxes, and cults propagated under the guise of being scientifically founded

and proven

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.

Physics and Philosophy - Sir James H. Jeans 2012-07-16

A noted scientist illuminates the intertwined paths of philosophy and science from Plato to the present, and examines the transition from Newtonian classical mechanics to modern relativistic physics.

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.

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.

What Is Relativity? - Jeffrey Bennett
2014-02-25

An astrophysicist offers an entertaining introduction to Einstein's theories, explaining how well they have held up to rigorous testing over the years, and even describing the amazing phenomena readers would actually experience if they took a trip through a black hole.

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.

The Geometry of Art and Life - Matila Costiescu

Ghyka 1977-01-01

This classic study probes the geometric interrelationships between art and life in discussions ranging from dissertations by Plato, Pythagoras, and Archimedes to examples of modern architecture and art. Other topics include the Golden Section, geometrical shapes on the plane, geometrical shapes in space, crystal lattices, and other fascinating subjects. 80 plates and 64 figures.

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.

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.

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."

**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.
**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.

**The Principle of
Relativity** - Hendrik
Antoon Lorentz 1923

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.

The Fourth Dimension -

Rudy von Bitter Rucker 1985

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

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.

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.

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.

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 Thermo-Dynamics," "Hypotheses in Physics," and "The Calculus of Probabilities."

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.

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.

Introduction to Special Relativity - James H. Smith 2016-03-22

By the year 1900, most of physics seemed to be encompassed in the two great theories of Newtonian mechanics and Maxwell's theory of electromagnetism. Unfortunately, there were inconsistencies between the two theories that seemed irreconcilable. Although many physicists struggled with the problem, it took the genius of Einstein to see that the inconsistencies were concerned not merely with mechanics and electromagnetism, but with our most elementary ideas of space and time. In the special theory of relativity, Einstein

resolved these difficulties and profoundly altered our conception of the physical universe. Readers looking for a concise, well-written explanation of one of the most important theories in modern physics need search no further than this lucid undergraduate-level text. Replete with examples that make it especially suitable for self-study, the book assumes only a knowledge of algebra. Topics include classical relativity and the relativity postulate, time dilation, the twin paradox, momentum and energy, particles of zero mass, electric and magnetic fields and forces, and more.

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.

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.

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

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