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Relativity The Collected Papers of Albert Einstein: The early years, 1879-1902 On the Electrodynamics of Moving Bodies Einstein's Miraculous Year Einstein 1905 Einstein's Wife From Newton to Einstein The Golden Age of Theoretical Physics The collected papers of Albert Einstein Science and the Human Imagination Essays in Science Mathematical Foundation of the General Theory of Relativity An Einstein Encyclopedia Investigations on the Theory of the Brownian Movement A Student's Guide to Einstein's Major Papers Einstein, Picasso Albert Einstein, The Human Side How Einstein Found His Field Equations Time Travel in Einstein's Universe Causation in Science Special Relativity Masters of the Universe Albert Einstein Einstein's Pathway to the Special Theory of Relativity The Soul of Genius Einstein's Jewish Science The World As I See It The collected papers of Albert Einstein: The Berlin years : correspondence, 1914-1918 Einstein This Way to the Universe Einstein Thematic Origins of Scientific Thought On Relativity Theory Subtle is the Lord : The Science and the Life of Albert Einstein Einstein 1905 Einstein's 1912 Manuscript on the Special Theory of Relativity The Road to Relativity Einstein Was Right Albert Einstein The Collected Papers of Albert Einstein, Volume 15 (Translation Supplement)

Einstein's Wife Jul 30 2022 The real-life story behind The Other Einstein—a fascinating profile of mathematician Mileva Einstein-Mari? and her alleged contributions to her husband’s scientific discoveries Albert Einstein’s first wife, Mileva Einstein-Mari?, was forgotten for decades. When a trove of correspondence between them beginning in their student days was discovered in 1986, her story began to be told. Some of the tellers of the “Mileva Story” made startling claims: that she was a brilliant mathematician who surpassed her husband, and that she made uncredited contributions to his most celebrated papers in 1905, including his paper on special relativity. This book, based on extensive historical research, uncovers the real “Mileva Story.” Mileva was one of the few women of her era to pursue higher education in science; she and Einstein were students together at the Zurich Polytechnic. Mileva’s ambitions for a science career, however, suffered a series of setbacks—failed diploma examinations, a disagreement with her doctoral dissertation adviser, an out-of-wedlock pregnancy by Einstein. She and Einstein married in 1903 and had two sons, but the marriage failed. So was Mileva her husband’s uncredited coauthor, unpaid assistant, or his essential helpmeet? It’s tempting to believe that she was her husband’s secret collaborator, but the authors of Einstein's Wife look at the actual evidence, and a chapter by Ruth Lewin Sime offers important historical context. The story they tell is that of a brave and determined young woman who struggled against a variety of obstacles at a time when science was not very welcoming to women.

Einstein's Jewish Science Nov 09 2020 This volume intertwines science, history, philosophy, theology, and politics in fresh and fascinating ways to solve the multifaceted riddle of what religion means - and what it means to science.

Einstein Jun 04 2020 A narrative portrait based on the complete body of Einstein's papers offers insight into his contributions to science, in an account that describes the influence of his discoveries on his personal views about morality, politics, and tolerance.

The Golden Age of Theoretical Physics May 28 2022 The Golden Age of Theoretical Physics contains 34 essays on the quantum and relativity theories and their applications. Most of them were presented as lectures at various universities in Europe and the USA by Jagdish Mehra, while some were published individually and others in collaboration with Helmut Rechenberg. This book deals with the most important themes developed in the first 40 years of the 20th century by some of the greatest pioneers and architects of modern physics. It is a vital source of information about what can be described as "the golden age of theoretical physics".

Causation in Science May 16 2021 This book explores the role of causal constraints in science, shifting our attention from causal relations between individual events--the focus of most philosophical treatments of causation—to a broad family of concepts and principles generating constraints on possible change. Yemima Ben-Menahem looks at determinism, locality, stability, symmetry principles, conservation laws, and the principle of least action—causal constraints that serve to distinguish events and processes that our best scientific theories mandate or allow from those they rule out. Ben-Menahem's approach reveals that causation is just as relevant to explaining why certain events fail to occur as it is to explaining events that do occur. She investigates the conceptual differences between, and interrelations of, members of the causal family, thereby clarifying problems at the heart of the philosophy of science. Ben-Menahem argues that the distinction between determinism and stability is pertinent to the philosophy of history and the foundations of statistical mechanics, and that the interplay of determinism and locality is crucial for understanding quantum mechanics. Providing historical perspective, she traces the causal constraints of contemporary science to traditional intuitions about causation, and demonstrates how the teleological appearance of some constraints is explained away in current scientific theories such as quantum mechanics. Causation in Science represents a bold challenge to both causal eliminativism and causal reductionism—the notions that causation has no place in science and that higher-level causal claims are reducible to the causal claims of fundamental physics.

Einstein 1905 Aug 31 2022 For Einstein, 1905 was a remarkable year. It was also a miraculous year for the history and future of science. In six short months, he published five papers that would transform our understanding of nature. This unparalleled period is the subject of Rigden's book, which deftly explains what distinguishes 1905 from all other years in the annals of science, and elevates Einstein above all other scientists of the twentieth century.

An Einstein Encyclopedia Dec 23 2021 The complete guide to everything you ever wanted to know about Einstein This is the single most complete guide to Albert Einstein's life and work for students, researchers, and browsers alike. Written by three leading Einstein scholars who draw on their combined wealth of expertise gained during their work on the Collected Papers of Albert Einstein, this authoritative and accessible reference features more than one hundred entries and is divided into three parts covering the personal, scientific, and public spheres of Einstein’s life. An Einstein Encyclopedia contains entries on Einstein’s birth and death, family and romantic relationships, honors and awards, educational institutions where he studied and worked, citizenships and immigration to America, hobbies and travels, plus the people he befriended and the history of his archives and the Einstein Papers Project. Entries on Einstein’s scientific theories provide useful background and context, along with details about his assistants, collaborators, and rivals, as well as physics concepts related to his work. Coverage of Einstein’s role in public life includes entries on his Jewish identity, humanitarian and civil rights involvements, political and educational philosophies, religion, and more. Commemorating the hundredth anniversary of the theory of general relativity, An Einstein Encyclopedia also includes a chronology of Einstein’s life and appendixes that provide information for further reading and research, including an annotated list of a selection of Einstein’s publications and a review of selected books about Einstein. More than 100 entries cover the rich details of Einstein’s personal, professional, and public life Authoritative entries explain Einstein’s family relationships, scientific achievements, political activities, religious views, and more More than 40 illustrations include photos of Einstein and his circle plus archival materials A chronology of Einstein’s life, appendixes, and suggestions for further reading provide essential details for further research

Einstein, Picasso Sep 19 2021 The most important scientist of the twentieth century and the most important artist had their periods of greatest creativity almost simultaneously and in remarkably similar circumstances. This fascinating parallel biography of Albert Einstein and Pablo Picasso as young men examines their greatest creations -- Picasso's Les Femmes d'Alger and Einstein's special theory of relativity. Miller shows how these breakthroughs arose not only from within their respective fields but from larger currents in the intellectual culture of the times. Ultimately, Miller shows how Einstein and Picasso, in a deep and important sense, were both working on the same problem.

Albert Einstein Feb 10 2021 Albert Einstein, 1879-1955. German theoretical physicist and Nobel Prize laureate.

The Road to Relativity Nov 29 2019 An annotated facsimile edition of Einstein's handwritten manuscript on the foundations of general relativity This richly annotated facsimile edition of "The Foundation of General Relativity" introduces a new generation of readers to Albert Einstein's theory of gravitation. Written in 1915, this remarkable document is a watershed in the history of physics and an enduring testament to the elegance and precision of Einstein's thought. Presented here is a beautiful facsimile of Einstein's original handwritten manuscript, along with its English translation and an insightful page-by-page commentary that places the work in historical and scientific context. Hanoch Gutfreund and Jürgen Renn's concise introduction traces Einstein's intellectual odyssey from special to general relativity, and their essay "The Charm of a Manuscript" provides a delightful meditation on the varied afterlife of Einstein's text. Featuring a foreword by John Stachel, this handsome edition also includes a biographical glossary of the figures discussed in the book, a comprehensive bibliography, suggestions for further reading, and numerous photos and illustrations throughout.

Time Travel in Einstein's Universe Jun 16 2021 A Princeton astrophysicist explores whether journeying to the past or future is scientifically possible in this “intriguing” volume (Neil deGrasse Tyson). It was H. G. Wells who coined the term “time machine”—but the concept of time travel, both forward and backward, has always provoked fascination and yearning. It has mostly been dismissed as an impossibility in the world of physics; yet theories posited by Einstein, and advanced by scientists including Stephen Hawking and Kip Thorne, suggest that the phenomenon could actually occur. Building on these ideas, J. Richard Gott, a professor who has written on the subject for Scientific American, Time, and other publications, describes how travel to the future is not only possible but has already happened—and contemplates whether travel to the past is also conceivable. This look at the surprising facts behind the science fiction of time travel “deserves the attention of anyone wanting wider intellectual horizons” (Booklist). “Impressively clear language. Practical tips for chrononauts on their options for travel and the contingencies to prepare for make everything sound bizarrely plausible. Gott clearly enjoys his subject and his excitement and humor are contagious; this book is a delight to read.” —Publishers Weekly

The World As I See It Oct 09 2020 The World as I See It is a book by Albert Einstein translated from the German by A. Harris and published in 1935 by John Lane The Bodley Head. The original German book is Mein Weltbild by Albert Einstein, first published in 1934 by Rudolf Kayser.

Einstein's Miraculous Year Oct 01 2022 Five extraordinary papers by Albert Einstein that transformed physics, edited and introduced by John Stachel and with a foreword by Nobel laureate Roger Penrose After 1905, Einstein's miraculous year, physics would never be the same again. In those twelve months, Einstein shattered many cherished scientific beliefs with five extraordinary papers that would establish him as the world's leading physicist. This book brings those papers together in an accessible format. The best-known papers are the two that founded special relativity: On the Electrodynamics of Moving Bodies and Does the Inertia of a Body Depend on Its Energy Content? In the former, Einstein showed that absolute time had to be replaced by a new absolute: the speed of light. In the second, he asserted the equivalence of mass and energy, which would lead to the famous formula $E = mc^2$. The book also includes On a Heuristic Point of View Concerning the Production and Transformation of Light, in which Einstein challenged the wave theory of light, suggesting that light could also be regarded as a collection of particles. This helped to open the door to a whole new world—that of quantum physics. For ideas in this paper, he won the Nobel Prize in 1921. The fourth paper also led to a Nobel Prize, although for another scientist, Jean Perrin. On the Movement of Small Particles Suspended in Stationary Liquids Required by the Molecular-Kinetic Theory of Heat concerns the Brownian motion of such particles. With profound insight, Einstein blended ideas from kinetic theory and classical hydrodynamics to derive an equation for the mean free path of such particles as a function of the time, which Perrin confirmed experimentally. The fifth paper, A New Determination of Molecular Dimensions, was Einstein's doctoral dissertation, and remains among his most cited articles. It shows how to calculate Avogadro's number and the size of molecules. These papers, presented in a modern English translation, are essential reading for any physicist, mathematician, or astrophysicist. Far more than just a collection of scientific articles, this book presents work that is among the high points of human achievement and marks a watershed in the history of science. Coinciding with the 100th anniversary of the miraculous year, this new paperback edition includes an introduction by John Stachel, which focuses on the personal aspects of Einstein's youth that facilitated and led up to the miraculous year.

How Einstein Found His Field Equations Jul 18 2021 Einstein's field equations of gravitation are a core element of his general theory of relativity. In four short communications to the Prussian Academy of Sciences in Berlin in November 1915, we can follow the final steps toward these equations and the resulting theory's spectacular success in accounting for the anomalous motion of Mercury's perihelion. This source book provides an expert guide to these four groundbreaking papers. Following an introductory essay placing these papers in the context of the development of Einstein's theory, it presents and analyzes, in addition to the four papers of November 1915, a careful selection of (critical excerpts from) papers, letters, and manuscripts documenting the path that early on led Einstein to the field equations of the first November 1915 paper, but then took a turn away from them only to lead back to them in the end. Drawing on extensive research at the Einstein Papers Project and the Max Planck Institute for History of Science, this volume traces the intricate interplay between considerations of physics and considerations of mathematics that guided Einstein along this path. It thus presents a concise yet authoritative account of how Einstein found his field equations, affording readers who are prepared to immerse themselves in these intricacies a unique glimpse of Einstein at work at the height of his creative prowess. Highlights of this journey in Einstein's footsteps include the crucial pages (with detailed annotation) from the Zurich Notebook, the record of Einstein's early search for field equation with his mathematician friend Marcel Grossmann, and the Einstein-Besso manuscript, documenting Einstein's attempts with his friend and confidant Michele Besso to explain the Mercury anomaly on the basis of the equations that he and Grossmann had eventually settled on in the Zurich Notebook.

Einstein Was Right Oct 28 2019 An authoritative interdisciplinary account of the historic discovery of gravitational waves In 1915, Albert Einstein predicted the existence of gravitational waves—ripples in the fabric of spacetime caused by the movement of large masses—as part of the theory of general relativity. A century later, researchers with the Laser Interferometer Gravitational-Wave Observatory (LIGO) confirmed Einstein's prediction, detecting gravitational waves generated by the collision of two black holes. Shedding new light on the hundred-year history of this momentous achievement, Einstein Was Right brings together essays by two of the physicists who won the Nobel Prize for their instrumental roles in the discovery, along with contributions by leading scholars who offer unparalleled insights into one of the most significant scientific breakthroughs of our time. This illuminating book features an introduction by Tilman Sauer and invaluable firsthand perspectives on the history and significance of the LIGO consortium by physicists Barry Barish and Kip Thorne. Theoretical physicist Alessandra Buonanno discusses the new possibilities opened by gravitational wave astronomy, and sociologist of science Harry Collins and historians of science Diana Kormos Buchwald, Daniel Kennefick, and Jürgen Renn provide further insights into the history of relativity and LIGO. The book closes with a reflection by philosopher Don Howard on the significance of Einstein's theory for the philosophy of science. Edited by Jed Buchwald, Einstein Was Right is a compelling and thought-provoking account of one of the most thrilling scientific discoveries of the modern age.

Subtle is the Lord : The Science and the Life of Albert Einstein Mar 02 2020 Since the death of Albert Einstein in 1955 there have been many books and articles written about the man and a number of attempts to "explain" relativity. In this new major work Abraham Pais, himself an eminent physicist who worked alongside Einstein in the post-war years, traces the development of Einstein's entire oeuvre. This is the first book

which deal comprehensively and in depth with Einstein's science, both the successes and the failures. Running through the book is a completely non-scientific biography (identified in the table of contents by italic type) including many letters which appear in English for the first time, as well as other information not published before. Throughout the preparation of this book, Pais has had complete access to the Einstein Archives (now in the possession of the Hebrew University) and the invaluable guidance of the late Helen Dukas--formerly Einstein's private secretary.

Albert Einstein, The Human Side Aug 19 2021 Modesty, humor, compassion, and wisdom are the traits most evident in this illuminating selection of personal papers from the Albert Einstein Archives. The illustrious physicist wrote as thoughtfully to an Ohio fifth-grader, distressed by her discovery that scientists classify humans as animals, as to a Colorado banker who asked whether Einstein believed in a personal God. Witty rhymes, an exchange with Queen Elizabeth of Belgium about fine music, and expressions of his devotion to Zionism are but some of the highlights found in this warm and enriching book.

Thematic Origins of Scientific Thought May 04 2020 The highly acclaimed first edition of this major work convincingly established Gerald Holton's analysis of the ways scientific ideas evolve. His concept of "themata," induced from case studies with special attention to the work of Einstein, has become one of the chief tools for understanding scientific progress. It is now one of the main approaches in the study of the initiation and acceptance of individual scientific insights. Three principal consequences of this perspective extend beyond the study of the history of science itself. It provides philosophers of science with the kind of raw material on which some of the best work in their field is based. It helps intellectual historians to redefine the place of modern science in contemporary culture by identifying influences on the scientific imagination. And it prompts educators to reexamine the conventional concepts of education in science. In this new edition, Holton has masterfully reshaped the contents and widened the coverage. Significant new material has been added, including a penetrating account of the advent of quantum physics in the United States, and a broad consideration of the integrity of science, as exemplified in the work of Niels Bohr. In addition, a revised introduction and a new postscript provide an updated perspective on the role of themata. The result of this thoroughgoing revision is an indispensable volume for scholars and students of scientific thought and intellectual history.

A Student's Guide to Einstein's Major Papers Oct 21 2021 In 1905 Albert Einstein produced breakthrough work in three major areas of physics (atoms and Brownian motion, quanta, and the special theory of relativity), followed, in 1916, by the general theory of relativity. This book develops the detail of the papers, including the mathematics, to guide the reader in working through them.

Science and the Human Imagination Mar 26 2022 Professor Bernstein discusses Einstein's work through the year 1905, focusing on the invention of the special theory of relativity, while Dr. Feinberg traces Einstein's contributions to the quantum theory from that year to his death in 1955. The second set of papers focuses on the status of chemical research and chemical education in the state of New Jersey. Dr. Hass cites several chemical achievements of the state, and Dr. Bose suggests ways of encouraging the blossoming of chemical talent in the state.

Einstein's 1912 Manuscript on the Special Theory of Relativity Dec 31 2019 This tribute to Einstein's genius opens with a brief essay by Hanoch Gutfreund, a chronology of Einstein's life, a selection of quotes by Einstein, and, to introduce the manuscript, a detailed description of the manuscript, its contents, publication history, and provenance.

Investigations on the Theory of the Brownian Movement Nov 21 2021 Five early papers evolve theory that won Einstein a Nobel Prize: "Movement of Small Particles Suspended in a Stationary Liquid Demanded by the Molecular-Kinetic Theory of Heat"; "On the Theory of the Brownian Movement"; "A New Determination of Molecular Dimensions"; "Theoretical Observations on the Brownian Motion"; and "Elementary Theory of the Brownian Motion."

Relativity Jan 04 2023

Masters of the Universe Mar 14 2021 " ... Based on a series of interviews that a fictional person conducted with leading astronomers between 1913 and 1965 ... Although the interviews are purely fictional, a product of the author's imagination, they could have taken place in just the way that is described. They are solidly based on historical facts and, moreover, supplemented with careful annotations and references to the literature"--Dustjacket.

From Newton to Einstein Jun 28 2022 From Newton to Einstein is a book devoted to classical mechanics. "Classical" here includes the theory of special relativity as well because, as argued in the book, it is essentially Newtonian mechanics extended to very high speeds. This information is expanded from the author's popular Q&A website, a site aimed primarily at general readers who are curious about how physics explains the workings of the world. Hence, the answers emphasize concepts over formalism, and the mathematics is kept to a minimum. Students new to physics will find discussion and quantitative calculations for areas often neglected in introductory courses (e.g. air drag and non-inertial frames). The author gives us a more intuitive approach to special relativity than normally taught in introductory courses. One chapter discusses general relativity in a completely non-mathematical way emphasizing the equivalence principle and the generalized principle of relativity; the examples in this chapter can offer a new slant on applications of classical mechanics. Another chapter is devoted to the physics of computer games, sci-fi, superheros, and super weapons for those interested in the intersection of popular culture and science. Professional scientists will find topics that they may find amusing and, in some cases, everyday applications that they had not thought of. Brief tutorials are given for essential concepts (e.g. Newton's laws) and appendices give technical details for the interested reader.

Einstein 1905 Jan 30 2020 Analyzes several of Albert Einstein's theories, including his particle theory of light, theory of Brownian motion, and theory of special relativity, and explores the context of these ideas and their continued impact on society.

Essays in Science Feb 22 2022 The Authorized Albert Einstein Archives Edition: An homage to the men and women of science, and an exposition of Einstein's place in scientific history. In this fascinating collection of articles and speeches, Albert Einstein reflects not only on the scientific method at work in his own theoretical discoveries, but also eloquently expresses a great appreciation for his scientific contemporaries and forefathers, including Johannes Kepler, Isaac Newton, James Clerk Maxwell, Max Planck, and Niels Bohr. While Einstein is renowned as one of the foremost innovators of modern science, his discoveries uniquely his own, through his own words it becomes clear that he viewed himself as only the most recent in a long line of scientists driven to create new ways of understanding the world and to prove their scientific theories. Einstein's thoughtful examinations explain the "how" of scientific innovations both in his own theoretical work and in the scientific method established by those who came before him. This authorized ebook features a new introduction by Neil Berger, PhD, and an illustrated biography of Albert Einstein, which includes rare photos and never-before-seen documents from the Albert Einstein Archives at the Hebrew University of Jerusalem.

The Soul of Genius Dec 11 2020 A prismatic look at the meeting of Marie Curie and Albert Einstein and the impact these two pillars of science had on the world of physics, which was in turmoil. In 1911, some of the greatest minds in science convened at the First Solvay Conference in Physics, a meeting like no other. Almost half of the attendees had won or would go on to win the Nobel Prize. Over the course of those few days, these minds began to realize that classical physics was about to give way to quantum theory, a seismic shift in our history and how we understand not just our world, but the universe. At the center of this meeting were Marie Curie and a young Albert Einstein. In the years preceding, Curie had faced the death of her husband and soul mate, Pierre. She was on the cusp of being awarded her second Nobel Prize, but scandal erupted all around her when the French press revealed that she was having an affair with a fellow scientist, Paul Langevin. The subject of vicious misogynist and xenophobic attacks in the French press, Curie found herself in a storm that threatened her scientific legacy. Albert Einstein proved a supporter in her travails. They had an instant connection at Solvay. He was young and already showing flourishes of his enormous genius. Curie had been responsible for one of the greatest discoveries in modern science (radioactivity) but still faced resistance and scorn. Einstein recognized this grave injustice, and their mutual admiration and respect, borne out of this, their first meeting, would go on to serve them in their paths forward to making history. Curie and Einstein come alive as the complex people they were in the pages of *The Soul of Genius*. Utilizing never before seen correspondance and notes, Jeffrey Orens reveals the human side of these brilliant scientists, one who pushed boundaries and demanded equality in a man's world, no matter the cost, and the other, who was destined to become synonymous with genius.

The collected papers of Albert Einstein Apr 26 2022

Einstein Aug 07 2020 NOW A MAJOR SERIES 'GENIUS' ON NATIONAL GEOGRAPHIC, PRODUCED BY RON HOWARD AND STARRING GEOFFREY RUSH Einstein is the great icon of our age: the kindly refugee from oppression whose wild halo of hair, twinkling eyes, engaging humanity and extraordinary brilliance made his face a symbol and his name a synonym for genius. He was a rebel and nonconformist from boyhood days. His character, creativity and imagination were related, and they drove both his life and his science. In this marvellously clear and accessible narrative, Walter Isaacson explains how his mind worked and the mysteries of the universe that he discovered. Einstein's success came from questioning conventional wisdom and marvelling at mysteries that struck others as mundane. This led him to embrace a worldview based on respect for free spirits and free individuals. All of which helped make Einstein into a rebel but with a reverence for the harmony of nature, one with just the right blend of imagination and wisdom to transform our understanding of the universe. This new biography, the first since all of Einstein's papers have become available, is the fullest picture yet of one of the key figures of the twentieth century. This is the first full biography of Albert Einstein since all of his papers have become available -- a fully realised portrait of this extraordinary human being, and great genius. Praise for EINSTEIN by Walter Isaacson:- 'YOU REALLY MUST READ THIS.' Sunday Times 'As pithy as Einstein himself.' New Scientist '[A] brilliant biography, rich with newly available archival material.' Literary Review 'Beautifully written, it renders the physics understandable.' Sunday Telegraph 'Isaacson is excellent at explaining the science.' Daily Express

The Collected Papers of Albert Einstein: The early years, 1879-1902 Dec 03 2022

Albert Einstein Sep 27 2019 Om fysikeren Albert Einstein (1879-1955) og om hans relativitetsteori

On Relativity Theory Apr 02 2020

The collected papers of Albert Einstein: The Berlin years : correspondence, 1914-1918 Sep 07 2020 This volume opens in spring 1914 when Einstein takes up a research professorship at the Prussian Academy of Sciences in Berlin and closes with the collapse of the German Empire four and one-half years later. A good portion of the documentation, which comprises more than 675 letters, has only recently been discovered by the editors. The letters touch on all aspects of Einstein's activities and shed new light on his inner life, while enriching our understanding of his published papers, presented in volumes 6 and 7 of this series. The breakup of Einstein's first marriage and the divorce are presented here for the first time in all their complexity. New material shows Einstein maintaining a strong sense of moral urgency throughout the war. The scientific correspondence documents Einstein's struggle to find satisfactory field equations for his new gravitational theory--the general theory of relativity--and his continued discussion with leading physicists and mathematicians about the implications and further development of the theory.

On the Electrodynamics of Moving Bodies Nov 02 2022 This edition of Einstein's On the Electrodynamics of Moving Bodies is based on the English translation of his original 1905 German-language paper (published as Zur Elektrodynamik bewegter Körper, in Annalen der Physik. 17:891, 1905) which appeared in the book The Principle of Relativity, published in 1923 by Methuen and Company, Ltd. of London. Most of the papers in that collection are English translations from the German Das Relativitätsprinzip, 4th ed., published in 1922 by Tuebner.

The Collected Papers of Albert Einstein, Volume 15 (Translation Supplement) Aug 26 2019 A translation of selected non-English texts included in Volume 15 is available in paperback. Since this supplementary paperback includes only select portions of Volume 15, it is not recommended for purchase without the main volume. Every document in The Collected Papers of Albert Einstein appears in the language in which it was written, and this supplementary paperback volume presents the English translations of select portions of non-English materials in Volume 15. This translation does not include notes or annotation of the documentary volume and is not intended for use without the original language documentary edition which provides the extensive editorial commentary necessary for a full historical and scientific understanding of the documents.

Einstein's Pathway to the Special Theory of Relativity Jan 12 2021 This book pieces together the jigsaw puzzle of Einstein's journey to discovering the special theory of relativity. Between 1902 and 1905, Einstein sat in the Patent Office and may have made calculations on old pieces of paper that were once patent drafts. One can imagine Einstein trying to hide from his boss, writing notes on small sheets of paper, and, according to reports, seeing to it that the small sheets of paper on which he was writing would vanish into his desk-drawer as soon as he heard footsteps approaching his door. He probably discarded many pieces of papers and calculations and flung them in the waste paper basket in the Patent Office. The end result was that Einstein published nothing regarding the special theory of relativity prior to 1905. For many years before 1905, he had been intensely concerned with the topic; in fact, he was busily working on the problem for seven or eight years prior to 1905. Unfortunately, there are no surviving notebooks and manuscripts, no notes and papers or other primary sources from this critical period to provide any information about the crucial steps that led Einstein to his great discovery. In May 1905, Henri Poincare sent three letters to Hendrik Lorentz at the same time that Einstein wrote his famous May 1905 letter to Conrad Habicht, promising him four works, of which the fourth one, Relativity, was a rough draft at that point. In the May 1905 letters to Lorentz, Poincare presented the basic equations of his 1905 Dynamics of the Electron, meaning that, at this point, Poincare and Einstein both had drafts of papers relating to the principle of relativity. The book discusses Einstein's and Poincare's creativity and the process by which their ideas developed. The book also explores the misunderstandings and paradoxes apparent in the theory of relativity, and unravels the subtleties and creativity of Einstein.

This Way to the Universe Jul 06 2020 For readers of Sean Carroll, Brian Greene, Katie Mack, and anyone who wants to know what theoretical physicists actually do. This Way to the Universe is a celebration of the astounding, ongoing scientific investigations that have revealed the nature of reality at its smallest, at its largest, and at the scale of our daily lives. The enigmas that Professor Michael Dine discusses are like landmarks on a fantastic journey to the edge of the universe. Asked where to find out about the Big Bang, Dark Matter, the Higgs boson particle—the long cutting edge of physics right now—Dine had no single book he could recommend. This is his accessible, authoritative, and up-to-date answer. Comprehensible to anyone with a high-school level education, with almost no equations, there is no better author to take you on this amazing odyssey. Dine is widely recognized as having made profound contributions to our understanding of matter, time, the Big Bang, and even what might have come before it. This Way to the Universe touches on many emotional, critical points in his extraordinary career while presenting mind-bending physics like his answer to the Dark Matter and Dark Energy mysteries as well as the ideas that explain why our universe consists of something rather than nothing. People assume String Theory can never be tested, but Dine intrepidly explores exactly how the theory might be tested experimentally, as well as the pitfalls of falling in love with math. This book reflects a lifetime pursuing the deepest mysteries of reality, by one of the most humble and warmly engaging voices you will ever read.

Mathematical Foundation of the General Theory of Relativity Jan 24 2022 The theory which is sketched in the following pages forms the most wide-going generalization conceivable of what is at present known as "the theory of Relativity;" this latter theory I differentiate from the former "Special Relativity theory," and suppose it to be known. The generalization of the Relativity theory has been made much easier through the form given to the special Relativity theory by Minkowski, which mathematician was the first to recognize clearly the formal equivalence of the space like and time-like co-ordinates, and who made use of it in the building up of the theory. The mathematical apparatus useful for the general relativity theory, lay already complete in the "Absolute Differential Calculus", which were based on the researches of GAUSS,

RIEMANN and CHRISTOFFEL on the non-Euclidean manifold, and which have been shaped into a system by RICCI and LEVI-CIVITA, and already applied to the problems of theoretical physics. I have in part B of this communication developed in the simplest and clearest manner, all the supposed mathematical auxiliaries, not known to Physicists, which will be useful for our purpose, so that, a study of the mathematical literature is not necessary for an understanding of this paper. Finally in this place I thank my friend GROSSMANN, by whose help I was not only spared the study of the mathematical literature pertinent to this subject, but who also aided me in the researches on the field equations of gravitation.

Special Relativity Apr 14 2021 This book provides a thorough introduction to Einstein's special theory of relativity, suitable for anyone with a minimum of one year's university physics with calculus. It is divided into fundamental and advanced topics. The first section starts by recalling the Pythagorean rule and its relation to the geometry of space, then covers every aspect of special relativity, including the history. The second section covers the impact of relativity in quantum theory, with an introduction to relativistic quantum mechanics and quantum field theory. It also goes over the group theory of the Lorentz group, a simple introduction to supersymmetry, and ends with cutting-edge topics such as general relativity, the standard model of elementary particles and its extensions, superstring theory, and a survey of important unsolved problems. Each chapter comes with a set of exercises. The book is accompanied by a CD-ROM illustrating, through interactive animation, classic problems in relativity involving motion.

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