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ROBINSON AMINA

Diaspora Oxford University Press, USA
He's back! The physicist returns with an entirely new compilation of questions and answers from his long-lived website where laypeople can ask questions about anything physics related. This book focuses on adjectives (practical, beautiful, surprising, cool, frivolous) instead of nouns like the first two books (atoms, photons, quanta, mechanics, relativity). The answers within 'Physics Is' are responses to people looking for answers to fascinating (and often uninformed) questions. It covers topics such as sports, electromagnetism, gravitational theory, special relativity, superheroes, videogames, and science fiction. These books are designed for laypeople and rely heavily on concepts rather than formalism. That said, they keep the physics correct and don't water down, so expert physicists will find this book and its two companion titles fun reads. They may actually recognize similar questions posed to them by friends and family. As with the first two books, 'Physics Is' ends with a chapter with questions from people who think that 'The physicist' is a psychic and from people who think they have the answers to life, the universe and everything.
Reinventing Gravity Greg Egan
BASED ON NATURAL laws which govern all of creation, this book shatters the myth that success is the result of hard work, exacting plans, or driving ambition. In The Seven Spiritual Laws of Success, Deepak Chopra offers a life-altering perspective on the attainment of success: Once we understand our true nature and learn to live in harmony with natural law, a sense of well-being, good health, fulfilling relationships, energy and enthusiasm for life, and material abundance will spring forth easily and effortlessly. Filled with timeless wisdom and practical steps you can apply right away, this is a book you will want to read and refer to again and again.
The Janus Point Oxford University Press
A number of authors have noted that if some physical parameters were slightly changed, the universe could no longer support life, as we know it. This implies that life depends sensitively on the physics of our universe. Does this "fine-tuning" of the universe suggest that a creator god intentionally calibrated the initial conditions of the universe such that life on earth and the evolution of humanity would eventually emerge? In his in-depth and highly accessible discussion of this fascinating and controversial topic, the author looks at the evidence and comes to the opposite conclusion. He finds that the observations of science and our naked senses not only show no evidence for God, they provide evidence beyond a reasonable doubt that God does not exist.
The Field Basic Books (AZ)
In this age of superstring theories and Big Bang cosmology, we're used to thinking of the unknown as impossibly distant from our everyday lives. But in A Different Universe, Nobel Laureate Robert Laughlin argues that the scientific frontier is right under our fingers. Instead of looking for ultimate theories, Laughlin considers the world of emergent properties-meaning the properties, such as the hardness and shape of a crystal, that result from the organization of large numbers of atoms. Laughlin shows us how the most fundamental laws of physics are in fact emergent. A Different Universe is a truly mind-bending book that shows us why everything we think about fundamental physical laws needs to change.
A World Beyond Physics Penguin
In 2975, the orphan Yatima is grown from a randomly mutated digital mind seed in the conceptory of Konishi polis. Yatima explores the Coalition of Polises, the network of computers where most life in the solar system now resides, and joins a friend, Inoshiro, to borrow an abandoned robot body and meet a thriving community of “fleshers” in the enclave of Atlanta. Twenty-one years later, news arrives from a lunar observatory: gravitational waves from Lac G-1, a nearby pair of neutron stars, show that the Earth is about to be bathed in a gamma-ray flash created by the stars’ collision — an event that was not expected to take place for seven million years. Yatima and Inoshiro return to Atlanta to try to warn the fleshers, but meet suspicion and disbelief. Some lives are saved, but the Earth is ravaged. In the aftermath of the disaster, the survivors resolve to discover the cause of the neutron stars’ premature collision, and they launch a thousand polises into interstellar space in search of answers. This diaspora eventually reaches a planet subtly transformed to encode a message from an older group of travellers: a greater danger than Lac G-1 is imminent, and the only escape route leads beyond the visible universe.
Infinite Potential Orbis Books
In Deciphering Reality: Simulations, Tests, and Designs, Benjamin B. Olshin offers a series of essays that examine the detection of computer simulations, challenge visual models of reality, explore Daoist conceptions of reality, and present possible future directions for deciphering reality.
A Different Universe Basic Books
A carefully developed textbook focusing on the fundamental principles of nanoscale science and nanotechnology.
Engineering Self-Organising Systems Simon and Schuster
The modern materialist approach to life has conspicuously failed to explain such central mind-related features of our world as consciousness, intentionality, meaning, and value. This failure to account for something so integral to nature as mind, argues philosopher Thomas Nagel, is a major problem, threatening to unravel the entire naturalistic world picture, extending to biology, evolutionary theory, and cosmology. Since minds are features of biological systems that have developed through evolution, the standard materialist version of evolutionary biology is fundamentally incomplete. And the cosmological history that led to the origin of life and the coming into existence of the conditions for evolution cannot be a merely materialist history, either. An adequate conception of nature would have to explain the appearance in the universe of materially irreducible conscious minds, as such. Nagel's skepticism is not based on religious belief or on a belief in any definite alternative. In Mind and Cosmos, he does suggest that if the materialist account is wrong, then principles of a different kind may also be at work in the history of nature, principles of the growth of order that are in their logical form teleological rather than mechanistic. In spite of the great

achievements of the physical sciences, reductive materialism is a world view ripe for displacement. Nagel shows that to recognize its limits is the first step in looking for alternatives, or at least in being open to their possibility.

Love and Math Harper Collins

The bestselling author of Dogs That Know When Their Owners Are Coming Home offers an intriguing new assessment of modern day science that will radically change the way we view what is possible. In Science Set Free (originally published to acclaim in the UK as The Science Delusion), Dr. Rupert Sheldrake, one of the world's most innovative scientists, shows the ways in which science is being constricted by assumptions that have, over the years, hardened into dogmas. Such dogmas are not only limiting, but dangerous for the future of humanity. According to these principles, all of reality is material or physical; the world is a machine, made up of inanimate matter; nature is purposeless; consciousness is nothing but the physical activity of the brain; free will is an illusion; God exists only as an idea in human minds, imprisoned within our skulls. But should science be a belief-system, or a method of enquiry? Sheldrake shows that the materialist ideology is moribund; under its sway, increasingly expensive research is reaping diminishing returns while societies around the world are paying the price. In the skeptical spirit of true science, Sheldrake turns the ten fundamental dogmas of materialism into exciting questions, and shows how all of them open up startling new possibilities for discovery. Science Set Free will radically change your view of what is real and what is possible.

Deciphering Reality Basic Books (AZ)

Self-organisation, self-regulation, self-repair, and self-maintenance are promising conceptual approaches to deal with the ever increasing complexity of distributed interacting software and information handling systems. Self-organising applications are able to dynamically change their functionality and structure without direct user intervention to respond to changes in requirements and the environment. This book comprises revised and extended papers presented at the International Workshop on Engineering Self-Organising Applications, ESOA 2004, held in New York, NY, USA in July 2004 at AAMAS as well as invited papers from leading researchers. The papers are organized in topical sections on state of the art, synthesis and design methods, self-assembly and robots, stigmergy and related topics, and industrial applications.

The Five Ages of the Universe Knopf Canada

Einstein's gravity theory—his general theory of relativity—has served as the basis for a series of astonishing cosmological discoveries. But what if, nonetheless, Einstein got it wrong? Since the 1930s, physicists have noticed an alarming discrepancy between the universe as we see it and the universe that Einstein's theory of relativity predicts. There just doesn't seem to be enough stuff out there for everything to hang together. Galaxies spin so fast that, based on the amount of visible matter in them, they ought to be flung to pieces, the same way a spinning yo-yo can break its string. Cosmologists tried to solve the problem by positing dark matter—a mysterious, invisible substance that surrounds galaxies, holding the visible matter in place—and particle physicists, attempting to identify the nature of the stuff, have undertaken a slew of experiments to detect it. So far, none have. Now, John W. Moffat, a physicist at the Perimeter Institute for Theoretical Physics in Waterloo, Canada, offers a different solution to the problem. The capstone to a storybook career—one that began with a correspondence with Einstein and a conversation with Niels Bohr—Moffat's modified gravity theory, or MOG, can model the movements of the universe without recourse to dark matter, and his work challenging the constancy of the speed of light raises a stark challenge to the usual models of the first half-million years of the universe's existence. This bold new work, presenting the entirety of Moffat's hypothesis to a general readership for the first time, promises to overturn everything we thought we knew about the origins and evolution of the universe.

Quantum Computing Since Democritus Springer Science & Business Media

Proposes a new way of understanding and interpreting the fundamental laws of science that will open up human thinking to the vast possibilities of the universe.

Lectures on General Relativity, Cosmology and Quantum Black Holes Basic Books

The purpose of this book is to provide a deeper insight into the modern theories of molecular matter. It incorporates the most important developments which have taken place during the last decades and reflects the modern trend to abstraction. At the present state of the art we have acquired a fairly good knowledge of "how to. compute" small molecules us ing the methods of quantum chemistry. Yet, in spite of many statements to the contrary and many superficial discussions, the theoretical basis of chemistry and biology is not safely in our hands. It is all but impossible to summarize the modern developments of the theory of matter in nontechnical language. But I hope that I can give some feeling for the problems, the intellectual excitements and the wor ries of some theoreticians. I know very well that such an enterprise is a dangerous adventure and that one says that a clever scientist should take care of his reputation by barricading himself behind the safe wall of his speciality. This volume is not meant to be a textbook; in many respects it has complementary goals. For good and bad reasons, most textbooks ignore the historical and philosophical aspects and go ahead on the basis of crude simplifications; many even lie like the devil and do not shrink from naive indoctrination. Some sections of this book can be read as commentaries on our standard texts, they are intended to stir the waters with controversy.

A Mind Over Matter Cambridge University Press

Much of Stuart Kauffman's work in the philosophy of evolutionary biology has centered on the question of what he calls "prestatability" in evolution: that is, whether or not science can precisely predict the future development of biological features in organisms, using a singular "FinalTheory" of evolution. In this book, Kauffman argues that the development of life on earth is not prestatable, because no theory could ever fully account for the limitless variability of evolution. He believes that the biological universe's primary trait is that it is creative, and that acknowledgingthis creativity will lead to a radically different way in which humans view themselves and all other living beings. It is an argument against Reductive Materialism.Kauffman also asserts that man's Modern preoccupation to explain all things with scientific law has deadened our creative natures. In his words, he aims for the book to be "one that revises our scientific world view of the universe as entirely entailed by law." Instead, he advocates an approach toscience that accounts for "unprestatable" creativity, thus allowing humans to fully realize their creative selves. The book will build off the ideas developed in his last two works, Reinventing the Sacred and Investigations. Incorporating philosophers like Kant and Descartes, as well as the scienceof Newton and Darwin, Humanity in a Creative Universe is Stuart

Kauffman's argument for a creative and unpredictable view of modern science.

At Home in the Universe Deepak Chopra

A major scientific revolution has begun, a new paradigm that rivals Darwin's theory in importance. At its heart is the discovery of the order that lies deep within the most complex of systems, from the origin of life, to the workings of giant corporations, to the rise and fall of great civilizations. And more than anyone else, this revolution is the work of one man, Stuart Kauffman, a MacArthur Fellow and visionary pioneer of the new science of complexity. Now, in At Home in the Universe, Kauffman brilliantly weaves together the excitement of intellectual discovery and a fertile mix of insights to give the general reader a fascinating look at this new science--and at the forces for order that lie at the edge of chaos. We all know of instances of spontaneous order in nature--an oil droplet in water forms a sphere, snowflakes have a six-fold symmetry. What we are only now discovering, Kauffman says, is that the range of spontaneous order is enormously greater than we had supposed. Indeed, self-organization is a great undiscovered principle of nature. But how does this spontaneous order arise? Kauffman contends that complexity itself triggers self-organization, or what he calls "order for free," that if enough different molecules pass a certain threshold of complexity, they begin to self-organize into a new entity--a living cell. Kauffman uses the analogy of a thousand buttons on a rug--join two buttons randomly with thread, then another two, and so on. At first, you have isolated pairs; later, small clusters; but suddenly at around the 500th repetition, a remarkable transformation occurs--much like the phase transition when water abruptly turns to ice--and the buttons link up in one giant network. Likewise, life may have originated when the mix of different molecules in the primordial soup passed a certain level of complexity and self-organized into living entities (if so, then life is not a highly improbable chance event, but almost inevitable). Kauffman uses the basic insight of "order for free" to illuminate a staggering range of phenomena. We see how a single-celled embryo can grow to a highly complex organism with over two hundred different cell types. We learn how the science of complexity extends Darwin's theory of evolution by natural selection: that self-organization, selection, and chance are the engines of the biosphere. And we gain insights into biotechnology, the stunning magic of the new frontier of genetic engineering--generating trillions of novel molecules to find new drugs, vaccines, enzymes, biosensors, and more. Indeed, Kauffman shows that ecosystems, economic systems, and even cultural systems may all evolve according to similar general laws, that tissues and terra cotta evolve in similar ways. And finally, there is a profoundly spiritual element to Kauffman's thought. If, as he argues, life were bound to arise, not as an incalculably improbable accident, but as an expected fulfillment of the natural order, then we truly are at home in the universe. Kauffman's earlier volume, The Origins of Order, written for specialists, received lavish praise. Stephen Jay Gould called it "a landmark and a classic." And Nobel Laureate Philip Anderson wrote that "there are few people in this world who ever ask the right questions of science, and they are the ones who affect its future most profoundly. Stuart Kauffman is one of these." In At Home in the Universe, this visionary thinker takes you along as he explores new insights into the nature of life.

Life's Solution Prometheus Books

As the twentieth century closed, Fred Adams and Greg Laughlin captured the attention of the world by identifying the five ages of time. In The Five Ages of the Universe, Adams and Laughlin demonstrate that we can now understand the complete life story of the cosmos from beginning to end. Adams and Laughlin have been hailed as the creators of the definitive long-term projection of the evolution of the universe. Their achievement is awesome in its scale and profound in its scientific breadth. But The Five Ages of the Universe is more than a handbook of the physical processes that guided our past and will shape our future; it is a truly epic story. Without leaving earth, here is a fantastic voyage to the physics of eternity. It is the only biography of the universe you will ever need.

Worldviews Basic Books

A Different UniverseBasic Books

Science Set Free Basic Books

Examines the ramifications of Einstein's relativity theory, exploring the mysteries of time and considering black holes, time travel, the existence of God, and the nature of the universe.

Nanostructures and Nanotechnology BRILL

Takes students and researchers on a tour through some of the deepest ideas of maths, computer science and physics.

Chemistry, Quantum Mechanics and Reductionism Basic Books

PRAISE FOR PREVIOUS EDITIONS "This is a brilliantly clear introduction (and indeed reframing) of the history and philosophy of science in terms of worldviews and their elements.... In addition, the book is incredibly well-informed from both a scientific and philosophical angle. Highly recommended." Scientific and Medical Network "Unlike many other introductions to philosophy of science, DeWitt's book is at once historically informative and philosophically thorough and rigorous. Chapter notes, suggested readings, and references enhance its value." Choice "Written in clear and comprehensible prose and supplemented by effective diagrams and examples, Worldviews is an ideal text for anyone new to the history and philosophy of science. As the reader will come to find out, DeWitt is a gifted writer with the unique ability to break down complex and technical concepts into digestible parts, making Worldviews a welcoming and not overwhelming book for the introductory reader." History and Philosophy of the Life Sciences, vol. 28(2) Now in its third edition, Worldviews: An Introduction to the History and Philosophy of Science strengthens its reputation as the most accessible and teachable introduction to the history and philosophy of science on the market. Geared toward engaging undergraduates and those approaching the history and philosophy of science for the first time, this intellectually-provocative volume takes advantage of its author's extensive teaching experience, parsing complex ideas using straightforward and sensible examples drawn from the physical sciences. Building on the foundations which earned the book its critical acclaim, author Richard DeWitt considers fundamental issues in the philosophy of science through the historical worldviews that influenced them, charting the evolution of Western science through the rise and fall of dominant systems of thought. Chapters have been updated to include discussion of recent findings in quantum theory, general relativity, and evolutionary theory, and two new chapters exclusive to the third edition enrich its engagement with radical developments in contemporary science. At a time in modern history when the nature of truth, fact, and reality seem increasingly controversial, the third edition of Worldviews presents complex concepts with clarity and verve, and prepares inquisitive minds to engage critically with some of the most exciting questions in the philosophy of science.