

# Princeton Physics & Astrophysics

---

2021



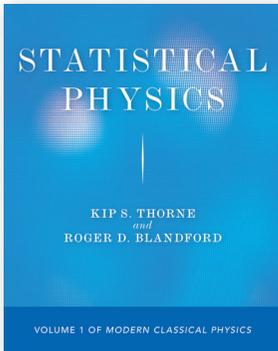
# A groundbreaking series of textbooks on twenty-first-century classical physics

---

Kip Thorne and Roger Blandford's monumental *Modern Classical Physics* is now available in five stand-alone volumes that make ideal textbooks for individual graduate or advanced undergraduate courses on statistical physics; optics; elasticity and fluid dynamics; plasma physics; and relativity and cosmology. Each volume teaches the fundamental concepts, emphasizes modern, real-world applications, and gives students a physical and intuitive understanding of the subject.

**Kip S. Thorne**, winner of the Nobel Prize in physics, is the Feynman Professor Emeritus of Theoretical Physics at Caltech. His books include *Gravitation* (Princeton) and *Black Holes and Time Warps*.

**Roger D. Blandford**, winner of the Crafoord and Shaw prizes in astronomy, is the Luke Blossom Professor in the School of Humanities and Sciences and founding director of the Kavli Institute for Particle Astrophysics and Cosmology at Stanford University.



## Statistical Physics

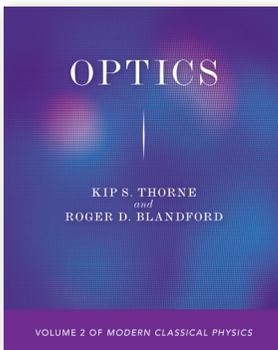
*Statistical Physics* is an essential introduction that is different from others on the subject because of its unique approach, which is coordinate-independent and geometric; embraces and elucidates the close quantum-classical connection and the relativistic and Newtonian domains; and demonstrates the power of statistical techniques—particularly statistical mechanics—by presenting applications not only to the usual kinds of things, such as gases, liquids, solids, and magnetic materials, but also to a much wider range of phenomena, including black holes, the universe, information and communication, and signal processing amid noise.

April 2021. 408 pages. 59 color + 4 b/w illus. 1 table.

Paperback 9780691206127

\$50.00 | £42.00

ebook 9780691215556



## Optics

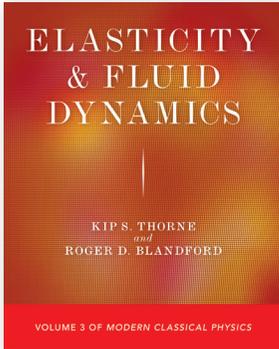
*Optics* is an essential introduction to a resurgent subject. “Optics” originally referred to the study of light, but today the field encompasses all types of waves, including electromagnetic waves, from gamma rays to radio waves; gravitational waves; and quantum waves. The past few decades have seen revolutions in optics—amazing advances in nonlinear optics technology, a growing understanding of optical phenomena throughout the natural world, and an increasing appreciation of the wide-ranging applicability of optics’ central principles. *Optics* shows how and why this subject—which was once a standard part of the physics curricula—should again be routinely taught to physics students, as well as to students in engineering, computer science, and the natural sciences.

April 2021. 272 pages. 69 color + 2 b/w illus. 1 table.

Paperback 9780691207360

\$45.00 | £38.00

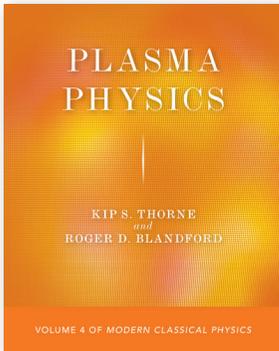
ebook 9780691215556



## Elasticity and Fluid Dynamics

Fluids and elastic solids are everywhere—from Earth’s crust and skyscrapers to ocean currents and airplanes. They are central to modern physics, astrophysics, the Earth sciences, biophysics, medicine, chemistry, engineering, and technology. While both elasticity and fluid dynamics involve continuum physics and use similar mathematical tools and modes of reasoning, each subject can be readily understood without the other, and the book allows them to be taught independently, with the first two chapters introducing and covering elasticity and the last six doing the same for fluid dynamics. The book also can serve as supplementary reading for many other courses.

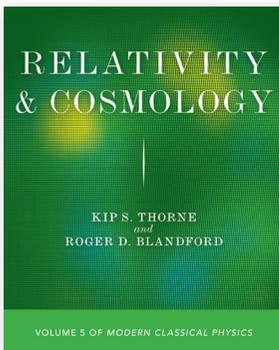
April 2021. 480 pages. 112 color + 6 b/w illus. 5 tables.  
Paperback 9780691207346 \$50.00 | £42.00 ebook 9780691215570



## Plasma Physics

*Plasma Physics* provides an essential introduction to the subject. A gas that is significantly ionized, usually by heating or photons, a plasma is composed of electrons and ions and sometimes has an embedded or confining magnetic field. Plasmas play a major role in many contemporary applications, phenomena, and fields, including attempts to achieve controlled thermonuclear fusion using magnetic or inertial confinement; in explanations of radio wave propagation in the ionosphere and the behavior of the solar corona and wind; and in astrophysics, where plasmas are responsible for emission throughout the electromagnetic spectrum, including from black holes, highly magnetized neutron stars, and ultrarelativistic outflows.

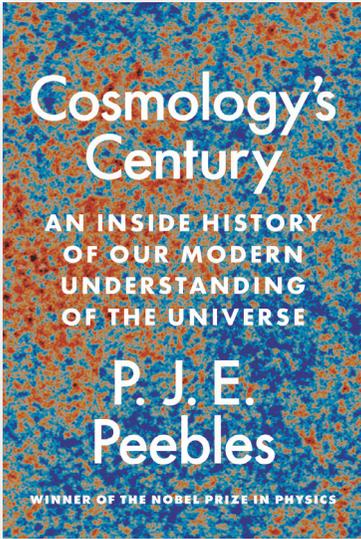
April 2021. 304 pages. 53 color + 1 b/w illus. 2 table.  
Paperback 9780691215501 \$50.00 | £42.00 ebook 9780691215532



## Relativity and Cosmology

Written by award-winning physicists who have made fundamental contributions to the field and taught it for decades, *Relativity and Cosmology* highlights recent transformations in our understanding of black holes, gravitational waves, and the cosmos; it emphasizes the physical interpretation of general relativity in terms of measurements made by observers; it explains the physics of the Riemann tensor in terms of tidal forces, differential frame dragging, and associated field lines; it presents an astrophysically oriented description of spinning black holes; it gives a detailed analysis of an incoming gravitational wave’s interaction with a detector such as LIGO; and it provides a comprehensive, in-depth account of the universe’s evolution, from its earliest moments to the present.

April 2021. 392 pages. 56 color + 2 b/w illus. 1 table.  
Paperback 9780691207391 \$60.00 | £50.00 ebook 9780691215549



From Nobel Prize–winning physicist P. J. E. Peebles, the story of cosmology from Einstein to today

## Cosmology's Century

Modern cosmology began a century ago with Albert Einstein's general theory of relativity and his notion of a homogenous, philosophically satisfying cosmos. *Cosmology's Century* is the story of how generations of scientists built on these thoughts and many new measurements to arrive at a well-tested physical theory of the structure and evolution of our expanding universe.

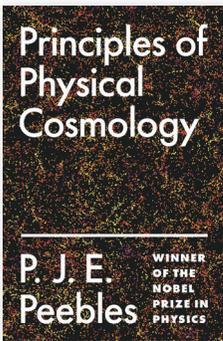
In this landmark book, one of the world's most esteemed theoretical cosmologists offers an unparalleled personal perspective on how the field developed. Taking readers from the field's beginnings, P. J. E. Peebles describes how scientists working in independent directions found themselves converging on a theory of cosmic evolution interesting enough to warrant the rigorous testing it passes so well. He explores the major advances as well as the wrong turns taken and the roads not explored. He shares recollections from major players in this story and provides a rare, inside look at how natural science is really done.

**P. J. E. Peebles** is a Nobel Prize–winning physicist. He is the Albert Einstein Professor of Science Emeritus in the Department of Physics at Princeton University.

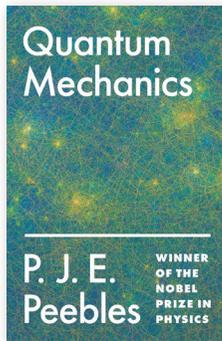
2020, 440 pages, 16 color + 33 b/w illus, 3 tables.

Hardback 9780691196022 \$35.00 | £30.00 ebook 9780691201665

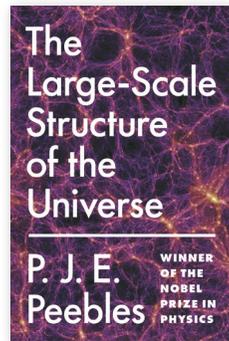
### NEW PAPERBACK EDITIONS



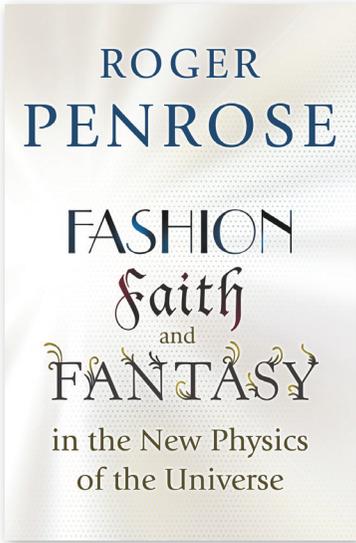
**Principles of Physical Cosmology**  
P. J. E. Peebles  
Paper 9780691209814 \$75.00 | £62.00  
ebook 9780691206721



**Quantum Mechanics**  
P. J. E. Peebles  
Paper 9780691209821 \$80.00 | £66.00  
ebook 9780691206738



**The Large-Scale Structure of the Universe**  
P. J. E. Peebles  
Paper 9780691209838 \$60.00 | £50.00  
ebook 9780691206714



Nobel Prize–winning physicist Roger Penrose questions some of the most fashionable ideas in physics today, including string theory

## Fashion, Faith, and Fantasy in the New Physics of the Universe

What can fashionable ideas, blind faith, or pure fantasy possibly have to do with the scientific quest to understand the universe? In this provocative book, Roger Penrose argues that fashion, faith, and fantasy, while sometimes productive and even essential in physics, may be leading today's researchers astray in three of the field's most important areas—string theory, quantum mechanics, and cosmology. The result is an important critique of some of the most significant developments in physics today from one of its most eminent figures.

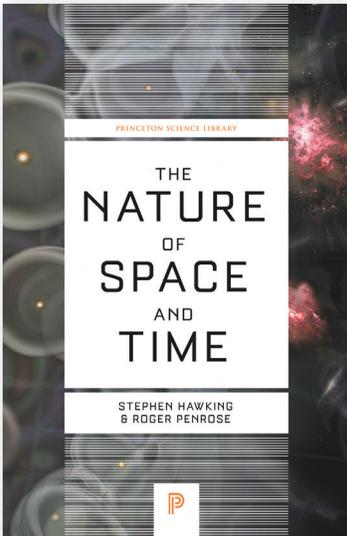
**Roger Penrose** is the Rouse Ball Professor of Mathematics Emeritus at the University of Oxford.

2016. 520 pages. 186 b/w illus.

Hardback 9780691119793

\$29.95 | £25.00

ebook 9781400880287



From two of the world's great physicists—Stephen Hawking and Nobel laureate Roger Penrose—a lively debate about the nature of space and time

## The Nature of Space and Time

Einstein said that the most incomprehensible thing about the universe is that it is comprehensible. But was he right? Can the quantum theory of fields and Einstein's general theory of relativity, the two most accurate and successful theories in all of physics, be united into a single quantum theory of gravity? Can quantum and cosmos ever be combined? In *The Nature of Space and Time*, two of the world's most famous physicists—Stephen Hawking (*A Brief History of Time*) and Roger Penrose (*The Road to Reality*)—debate these questions.

**Stephen Hawking** (1942–2018) was the Lucasian Professor of Mathematics Emeritus at the University of Cambridge.

**Roger Penrose** is the Rouse Ball Professor of Mathematics Emeritus at the University of Oxford.

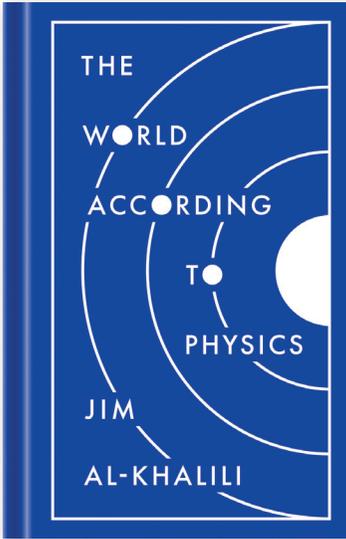
Princeton Science Library, Isaac Newton Institute Series of Lectures

2015. 160 pages. 75 b/w illus.

Paperback 9780691168449

\$14.95 | £12.99

ebook 9781400834747



Quantum physicist, *New York Times* bestselling author, and BBC host Jim Al-Khalili offers a fascinating and illuminating look at what physics reveals about the world

## The World According to Physics

Shining a light on the most profound insights revealed by modern physics, Jim Al-Khalili invites us all to understand what this crucially important science tells us about the universe and the nature of reality itself. Making even the most enigmatic scientific ideas accessible and captivating, this deeply insightful book illuminates why physics matters to everyone and calls one and all to share in the profound adventure of seeking truth in the world around us.

**Jim Al-Khalili** is professor of physics at the University of Surrey. He is one of Britain's best-known science communicators and has written numerous books.

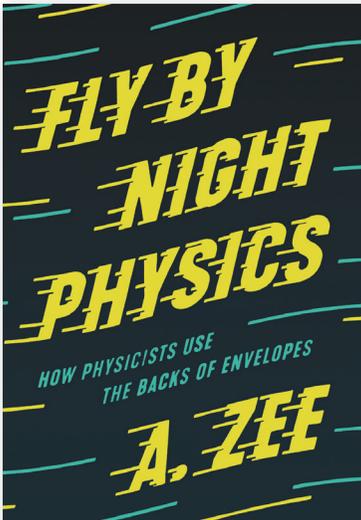
2020. 336 pages. 6 b/w illus.

Hardback 9780691182308

\$16.95 | £12.99

ebook 9780691201672

Audiobook 9780691205052



The essential primer for physics students who want to build their physical intuition

## Fly by Night Physics

Presented in A. Zee's incomparably engaging style, this book introduces physics students to the practice of using physical reasoning and judicious guesses to get at the crux of a problem. An essential primer for advanced undergraduates and beyond, *Fly by Night Physics* reveals the simple and effective techniques that researchers use to think through a problem to its solution—or failing that, to smartly guess the answer—before starting any calculations.

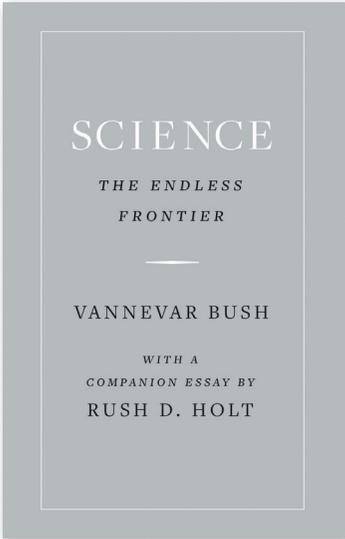
**A. Zee** is professor of physics at the Kavli Institute for Theoretical Physics at the University of California, Santa Barbara. His many books include *On Gravity*, *Group Theory in a Nutshell for Physicists*, *Einstein Gravity in a Nutshell*, *Quantum Field Theory in a Nutshell*, and *Fearful Symmetry* (all Princeton).

2020. 448 pages. 76 b/w illus. 2 tables.

Hardback 9780691182544

\$45.00 | £38.00

ebook 9780691207735



The classic case for why government must support science—with a new essay by physicist and former congressman Rush Holt

## Science, the Endless Frontier

*Science, the Endless Frontier* is recognized as the landmark argument for the essential role of science in society and government’s responsibility to support scientific endeavors. First issued when Vannevar Bush was the director of the U.S. Office of Scientific Research and Development during the Second World War, this classic remains vital in making the case that scientific progress is necessary to a nation’s health, security, and prosperity.

**Vannevar Bush** (1890–1974) was director of the U.S. Office of Scientific Research and Development during World War II. **Rush D. Holt** is CEO emeritus of the American Association for the Advancement of Science.

February 2021. 192 pages. 1 b/w illus. 1 table.  
Hardback 9780691186627 \$12.95 | £10.99 ebook 9780691201658



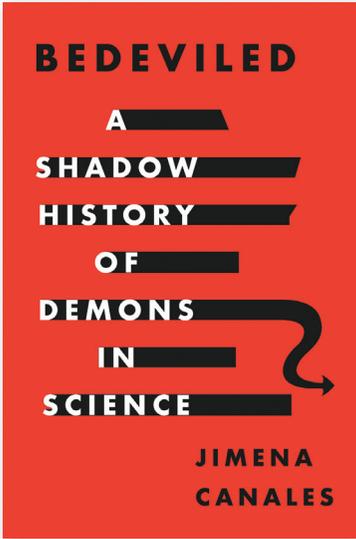
From the visionary founder of the Self-Assembly Lab at MIT, a manifesto for the dawning age of active materials

## Things Fall Together

Things in life tend to fall apart. Cars break down. Buildings fall into disrepair. Personal items deteriorate. Yet today’s researchers are exploiting newly understood properties of matter to physically sense, adapt, and fall together instead of apart. These materials open new directions for industrial innovation and challenge us to rethink the way we build and collaborate with our environment. *Things Fall Together* is a provocative guide to this emerging, often mind-bending reality, presenting a bold vision for harnessing the intelligence embedded in the material world.

**Skylar Tibbits** is founder and codirector of the Self-Assembly Lab and Associate Professor of Design Research in the Department of Architecture at the Massachusetts Institute of Technology.

June 2021. 224 pages. 29 color + 13 b/w illus.  
Hardback 9780691170336 \$24.95 | £22.00 ebook 9780691189710



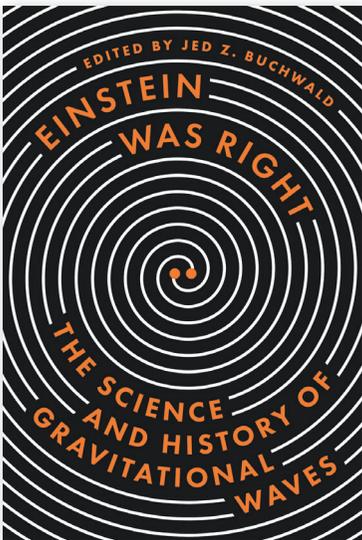
How scientists through the ages have conducted thought experiments using imaginary entities—demons—to test the laws of nature and push the frontiers of what is possible

## Bedeveled

Science may be known for banishing the demons of superstition from the modern world. Yet just as the demon-haunted world was being exorcized by the enlightening power of reason, a new kind of demon mischievously materialized in the scientific imagination itself. Scientists began to employ hypothetical beings to perform certain roles in thought experiments—experiments that can only be done in the imagination—and these impish assistants helped scientists achieve major breakthroughs that pushed forward the frontiers of science and technology.

**Jimena Canales** is a writer and faculty member of the Graduate College at the University of Illinois, Urbana-Champaign.

2020. 416 pages. 16 b/w illus.  
 Hardback 9780691175324      \$29.95 | £25.00      ebook 9780691186078



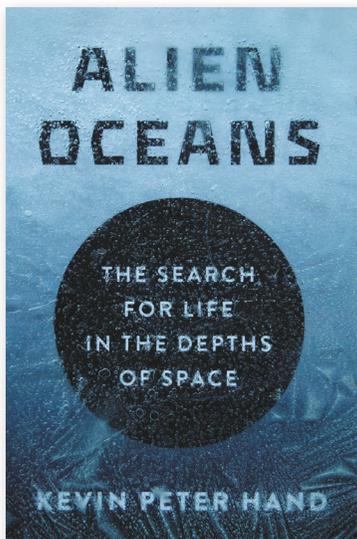
An authoritative interdisciplinary account of the historic discovery of gravitational waves

## Einstein Was Right

In 1915, Albert Einstein predicted the existence of gravitational waves 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.

**Jed Z. Buchwald** is the Doris and Henry Dreyfuss Professor of History at the California Institute of Technology.

2020. 264 pages. 16 color + 51 b/w illus. 1 table.  
 Hardback 9780691194547      \$35.00 | £30.00      ebook 9780691211978



Inside the epic quest to find life on the water-rich moons at the outer reaches of the solar system

## Alien Oceans

Where is the best place to find life beyond Earth? We often look to Mars as the most promising site in our solar system, but recent scientific missions have revealed that some of the most habitable real estate may actually lie farther away. Beneath the frozen crusts of several of the small, ice-covered moons of Jupiter and Saturn lurk vast oceans that may have been in existence for as long as Earth, and together may contain more than fifty times its total volume of liquid water. Could there be organisms living in their depths? *Alien Oceans* reveals the science behind the thrilling quest to find out.

**Kevin Peter Hand** is a scientist at NASA's Jet Propulsion Laboratory, where he has served as deputy chief scientist for solar system exploration and is leading an effort to land a spacecraft on the surface of Europa.

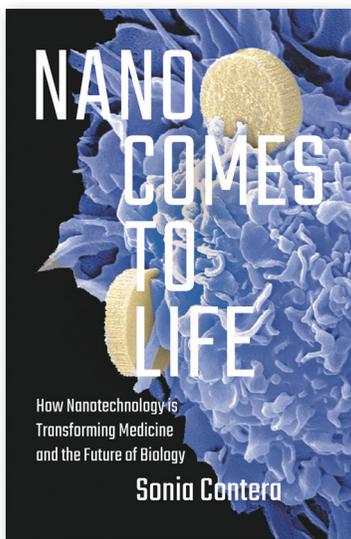
2020. 304 pages. 15 color + 22 b/w illus.

Hardback 9780691179513

\$27.95 | £22.00

ebook 9780691189642

Audiobook 9780691205595



The nanotechnology revolution that will transform human health and longevity

## Nano Comes to Life

*Nano Comes to Life* opens a window onto the nanoscale—the infinitesimal realm of proteins and DNA where physics and cellular and molecular biology meet—and introduces readers to the rapidly evolving nanotechnologies that are allowing us to manipulate the very building blocks of life. Sonia Contera gives an insider's perspective on this new frontier, revealing how nanotechnology enables a new kind of multidisciplinary science that is poised to give us control over our own biology, our health, and our lives.

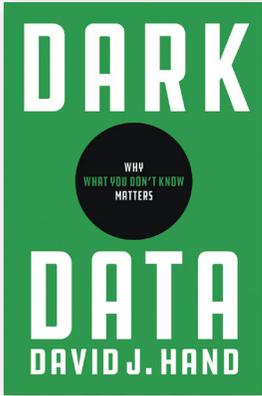
**Sonia Contera** is professor of biological physics in the Department of Physics at the University of Oxford and one of today's leading nanotech pioneers.

2019. 240 pages. 12 color + 11 b/w illus.

Hardback 9780691168807

\$24.95 | £22.00

ebook 9780691189284

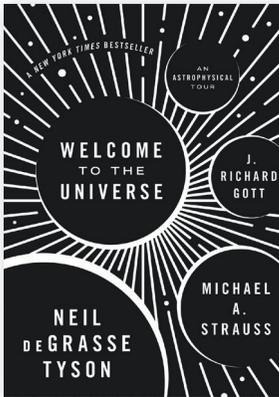


## Dark Data

In the era of big data, it is easy to imagine that we have all the information we need to make good decisions. But in fact the data we have are never complete. Just as much of the universe is composed of dark matter, invisible to us but nonetheless present, the universe of information is full of dark data that we overlook at our peril. In *Dark Data*, data expert David Hand takes us on a fascinating and enlightening journey into the world of the data we *don't* see.

**David J. Hand** is emeritus professor of mathematics and senior research investigator at Imperial College London.

2020. 344 pages. 6 b/w illus. 6 tables.  
 Hardback 9780691182377 \$29.95 | £25.00 ebook 9780691198859  
 Audiobook 9780691199177

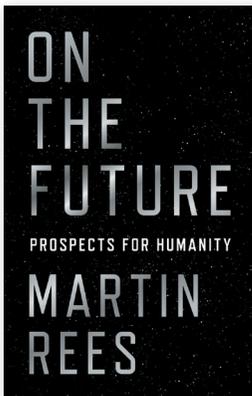


## Welcome to the Universe

*Welcome to the Universe* is a personal guided tour of the cosmos by three of today's leading astrophysicists. Inspired by the enormously popular introductory astronomy course they taught together at Princeton, this book covers it all—from planets, stars, and galaxies to black holes, wormholes, and time travel.

**Neil deGrasse Tyson** is director of the Hayden Planetarium at the American Museum of Natural History. **Michael A. Strauss** and **J. Richard Gott** are professors of astrophysics at Princeton University.

2016. 480 pages. 95 color illus.  
 Hardback 9780691157245 \$39.95 | £34.00 ebook 9781400883226  
 Welcome to the Universe: The Problem Book  
 Paperback 9780691177816 \$35.00 | £30.00 ebook 9781400888993

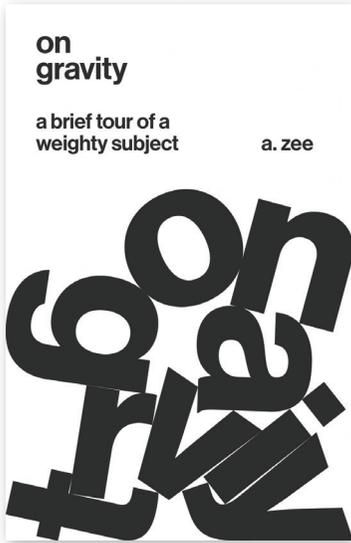


## On the Future

Humanity has reached a critical moment. Our world is unsettled and rapidly changing, and we face existential risks over the next century. Yet our approach to the future is characterized by short-term thinking, polarizing debates, alarmist rhetoric, and pessimism. In this short, exhilarating book, renowned scientist and bestselling author Martin Rees argues that humanity's prospects depend on our taking a very different approach to planning for tomorrow.

**Martin Rees** is Astronomer Royal, and has been Master of Trinity College and Director of the Institute of Astronomy at Cambridge University.

2018. 272 pages.  
 Hardback 9780691180441 \$18.95 | £15.99 ebook 9780691184401  
 Audiobook 9780691192994



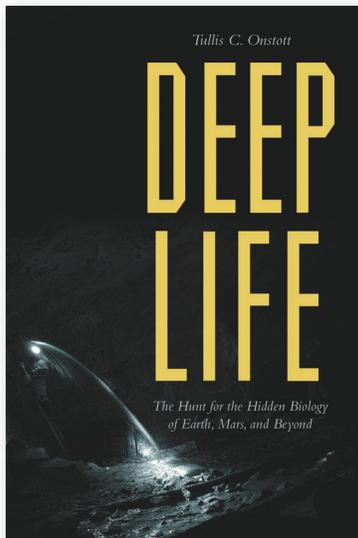
A pithy yet deep introduction to Einstein's general theory of relativity

## On Gravity

Of the four fundamental forces of nature, gravity might be the least understood and yet the one with which we are most intimate. *On Gravity* combines depth with accessibility to take us on a compelling tour of Einstein's general theory of relativity. A. Zee begins with the discovery of gravity waves, then explains how gravity can be understood in comparison to other classical field theories, presents the idea of curved spacetime, and explores black holes and Hawking radiation. Zee travels as far as the theory reaches, leaving us with tantalizing hints of the unknown, from the intransigence of quantum gravity to the mysteries of dark matter.

**A. Zee** is professor of physics at the Kavli Institute for Theoretical Physics at the University of California, Santa Barbara.

2020. 192 pages. 26 b/w illus.  
Paperback 9780691202662     \$14.95 | £12.99     ebook 9781400890309



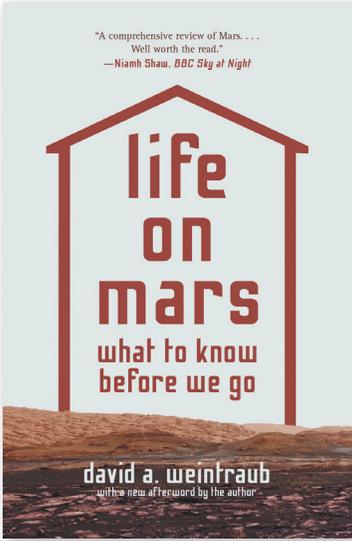
The thrilling quest for subsurface life on Earth and other planets

## Deep Life

*Deep Life* takes readers to uncharted regions deep beneath Earth's crust in search of life in extreme environments, and reveals how astonishing new discoveries by geomicrobiologists are aiding the quest to find life in the solar system. Tullis Onstott provides an insider's look at the pioneering fieldwork that is shining new light on Earth's hidden biology, a subterranean biosphere thriving with rare and exotic life forms. Join Onstott and his team on epic descents into South African gold mines, and travel deep beneath the frozen wastelands of the Arctic tundra to discover life as it could exist on Mars. An unforgettable scientific adventure, *Deep Life* takes you to the biotic fringe, where today's scientists hope to discover the very origins of life itself.

**Tullis C. Onstott** is professor of geosciences at Princeton University.

2020. 512 pages. 51 b/w illus.  
Paperback 9780691202822     \$24.95 | £22.00     ebook 9781400884247



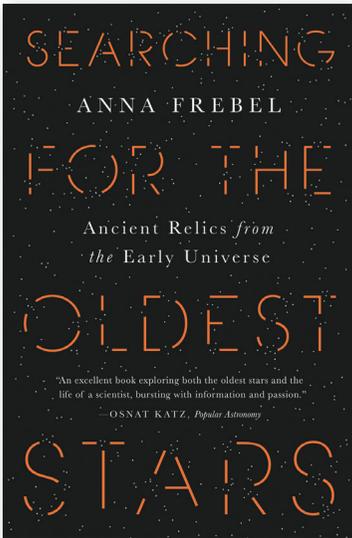
The search for life on Mars—and the moral issues confronting us as we prepare to send humans there

## Life on Mars

Does life exist on Mars? The question has captivated humans for centuries, but today it has taken on new urgency. As space agencies gear up to send the first manned missions to the Red Planet, we have a responsibility to think deeply about what kinds of life may already dwell there—and whether we have the right to invite ourselves in. Telling the complete story of our ongoing quest to answer one of the most tantalizing questions in astronomy, David Weintraub grapples with the profound moral and ethical questions confronting us as we prepare to introduce an unpredictable new life form—ourselves—into the Martian biosphere.

**David A. Weintraub** is professor of astronomy at Vanderbilt University.

2020. 336 pages. 8 color + 34 b/w illus.  
Paperback 9780691209258 \$19.95 | £16.99 ebook 9780691209265



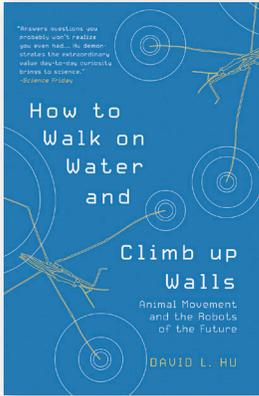
A leading astronomer takes readers behind the scenes of the thrilling science of stellar archaeology

## Searching for the Oldest Stars

Astronomers study the oldest observable stars in the universe in much the same way archaeologists study ancient artifacts on Earth. Anna Frebel takes readers into the far-flung depths of space and time to provide a gripping firsthand account of the cutting-edge science of stellar archaeology. Weaving the latest findings in astronomy with her own compelling insights as one of the world's leading researchers in the field, she explains how sections of the night sky are “excavated” in the hunt for these extremely rare, 13-billion-year-old relic stars and how this astonishing quest is revealing tantalizing new details about the origins and evolution of the cosmos. Along the way, Frebel recounts her own stories of discovery, offering an insider's perspective on this exciting frontier of science.

**Anna Frebel** is associate professor in the Department of Physics at the Massachusetts Institute of Technology.

2019. 320 pages. 11 color + 62 b/w illus. 8 tables.  
Paperback 9780691197197 \$18.95 | £15.99 ebook 9781400874286

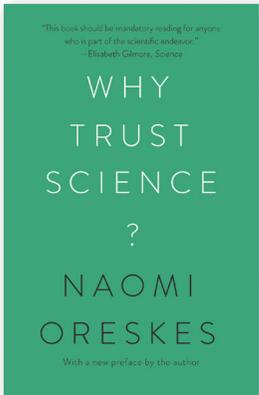


## How to Walk on Water and Climb up Walls

*How to Walk on Water and Climb up Walls* takes readers on a wondrous journey into the world of animal motion. From basement labs at MIT to the rain forests of Panama, David Hu shows how animals have adapted and evolved to traverse their environments, taking advantage of physical laws with results that are startling and ingenious.

**David L. Hu** is professor of mechanical engineering and biology, and adjunct professor of physics at the Georgia Institute of Technology.

2020. 248 pages. 12 color + 33 b/w illus.  
 Paperback 9780691204161 \$14.95 | £12.99 ebook 9780691184081

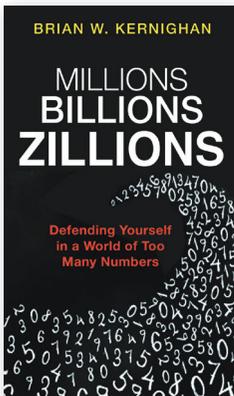


## Why Trust Science?

Are doctors right when they tell us vaccines are safe? Should we take climate experts at their word when they warn us about the perils of global warming? Why should we trust science when so many of our political leaders don't? Naomi Oreskes offers a bold and compelling defense of science, revealing why the social character of scientific knowledge is its greatest strength—and the greatest reason we can trust it.

**Naomi Oreskes** is the Henry Charles Lea Professor of the History of Science and affiliated professor of Earth and planetary sciences at Harvard University.

April 2021. 376 pages. 2 b/w illus. 1 table.  
 Paperback 9780691212265 \$18.95 | £15.99 ebook 9780691222370  
 Audiobook 9780691199139

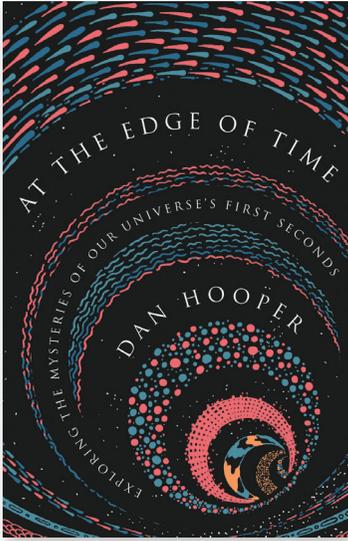


## Millions, Billions, Zillions

Numbers are often intimidating, confusing, and even deliberately deceptive—especially when they are really big. The media loves to report on millions, billions, and trillions, but frequently makes basic mistakes or presents such numbers in misleading ways. And misunderstanding numbers can have serious consequences. In this short, accessible, enlightening, and entertaining book, Brian Kernighan teaches anyone—even diehard math-phobes—how to demystify the numbers that assault us every day.

**Brian W. Kernighan** is professor of computer science at Princeton University.

2020. 176 pages. 30 b/w illus.  
 Paperback 9780691209098 \$16.95 | £13.99 ebook 9780691190136



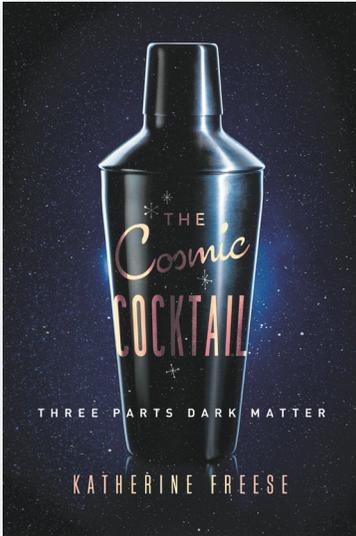
A new look at the first few seconds after the Big Bang—and how research into these moments continues to revolutionize our understanding of our universe

## At the Edge of Time

Scientists in recent decades have made crucial discoveries about how our cosmos evolved over the past 13.8 billion years. But we still know little about what happened in the first seconds after the Big Bang. *At the Edge of Time* focuses on what we have learned and are striving to understand about this mysterious period at the beginning of cosmic history. Delving into the remarkable world of cosmology, Dan Hooper describes many of the extraordinary questions that scientists are asking about the origin and nature of our world.

**Dan Hooper** is a senior scientist and the head of the Theoretical Astrophysics Group at the Fermi National Accelerator Laboratory and a professor of astronomy and astrophysics at the University of Chicago.

April 2021. 248 pages. 11 b/w illus.  
 Paperback 9780691206424 \$17.95 | £14.99 ebook 9780691197005



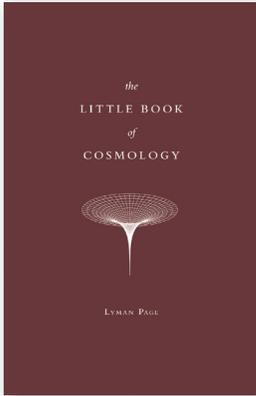
The inside story of the epic quest to solve the mystery of dark matter

## The Cosmic Cocktail

The ordinary atoms that make up the known universe—from our bodies and the air we breathe to the planets and stars—constitute only 5 percent of all matter and energy in the cosmos. The rest is known as dark matter and dark energy, because their precise identities are unknown. *The Cosmic Cocktail* is the inside story of the epic quest to solve one of the most compelling enigmas of modern science—what is the universe made of?—told by one of today’s foremost pioneers in the study of dark matter.

**Katherine Freese** is director of Nordita, the Nordic Institute for Theoretical Physics, in Stockholm, and professor of physics at the University of Michigan.

2016. 264 pages. 15 color + 73 b/w illus.  
 Paperback 9780691169187 \$19.95 | £16.99 ebook 9781400850075

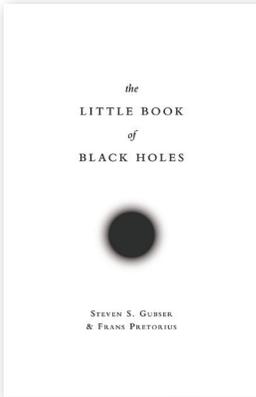


## The Little Book of Cosmology

*The Little Book of Cosmology* provides a breathtaking look at our universe on the grandest scales imaginable. Written by one of the world's leading experimental cosmologists, this short but deeply insightful book describes what scientists are revealing through precise measurements of the faint thermal afterglow of the Big Bang—known as the cosmic microwave background, or CMB—and how their findings are transforming our view of the cosmos.

**Lyman Page** is the James S. McDonnell Distinguished University Professor of Physics at Princeton University.

2020. 152 pages. 9 color + 13 b/w illus. 1 table.  
 Hardback 9780691195780 \$19.95 | £16.99 ebook 9780691201696

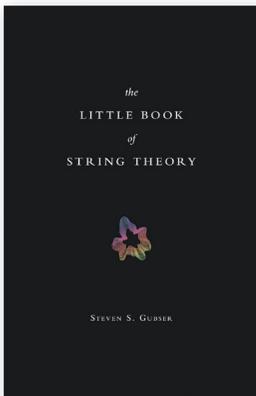


## The Little Book of Black Holes

Black holes have long intrigued scientists and the public with their bizarre and fantastical properties. Although Einstein understood that black holes were mathematical solutions to his equations, he never accepted their physical reality. Black holes have since been the subject of intense research. *The Little Book of Black Holes* takes readers deep into the mysterious heart of the subject, offering rare clarity of insight into the physics that makes black holes simple yet destructive manifestations of geometric destiny.

**Steven S. Gubser** (1972–2019) was professor of physics at Princeton University. **Frans Pretorius** is professor of physics at Princeton.

2017. 200 pages. 29 b/w illus.  
 Hardback 9780691163727 \$19.95 | £16.99 ebook 9781400888290



## The Little Book of String Theory

*The Little Book of String Theory* offers a short, accessible, and entertaining introduction to one of the most talked-about areas of physics today. String theory has been called the “theory of everything.” It seeks to describe all the fundamental forces of nature. It encompasses gravity and quantum mechanics in one unifying theory. But it is unproven and fraught with controversy. After reading this book, you’ll be able to draw your own conclusions about string theory.

**Steven S. Gubser** (1972–2019) was professor of physics at Princeton University.

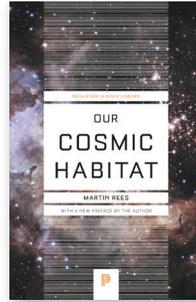
2010. 184 pages. 21 b/w illus.  
 Hardback 9780691142890 \$19.95 | £16.99 ebook 9781400834433



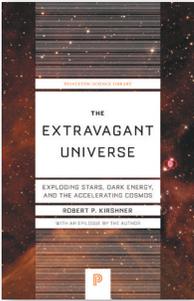
**It's About Time**  
N. David Mermin  
Paper 9780691218779 \$16.95 | £13.99



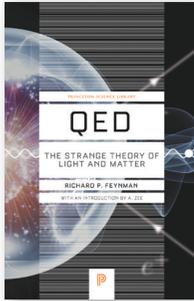
**Reinventing Discovery**  
Michael Nielsen  
Paper 9780691202846 \$17.95 | £14.99  
ebook 9780691202853



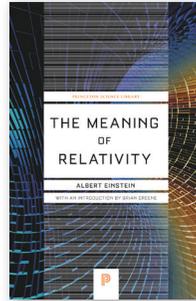
**Our Cosmic Habitat**  
Martin Rees  
Paper 9780691178097 \$17.95 | £14.99  
ebook 9781400888986



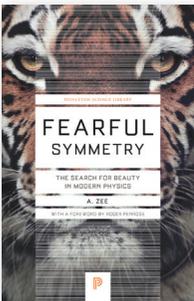
**The Extravagant Universe**  
Robert P. Kirshner  
Paper 9780691173184 \$19.95 | £16.99  
ebook 9781400883806



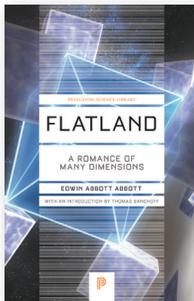
**QED**  
Richard P. Feynman  
Paper 9780691164090 \$18.95 | £15.99  
ebook 9781400847464  
*Not for sale in the Commonwealth (except Canada)*



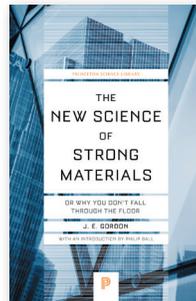
**The Meaning of Relativity**  
Albert Einstein  
Paper 9780691164083 \$19.95 | £16.99  
ebook 9781400851874  
*Not for sale in the Commonwealth (except Canada)*



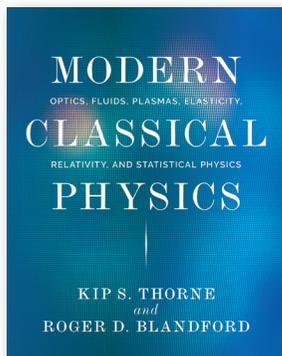
**Fearful Symmetry**  
A. Zee  
Paper 9780691173269 \$22.95 | £18.99  
ebook 9781400874507



**Flatland**  
Edwin Abbott Abbott  
Paper 9780691165554 \$12.95 | £10.99  
ebook 9781400866649



**The New Science of Strong Materials**  
J. E. Gordon  
Paper 9780691180984 \$19.95 | £16.99  
*For sale only in the United States, US Dependencies, and the Philippines*

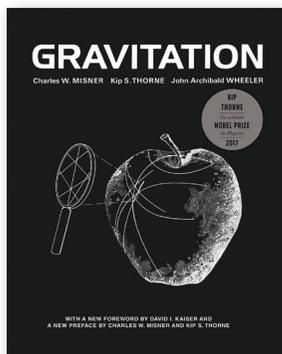


## Modern Classical Physics

This first-year, graduate-level text and reference book covers the fundamental concepts and twenty-first-century applications of six major areas of classical physics that every masters- or PhD-level physicist should be exposed to: statistical physics, optics (waves of all sorts), elastodynamics, fluid mechanics, plasma physics, and special and general relativity and cosmology.

**Kip S. Thorne**, co-winner of the 2017 Nobel Prize in physics, is the Feynman Professor Emeritus of Theoretical Physics at Caltech. **Roger D. Blandford**, co-winner of the 2016 Crafoord Prize in Astronomy, is the Luke Blossom Professor of Physics at Stanford University.

2017. 1552 pages. 349 color + 6 b/w illus. 15 tables.  
 Hardback 9780691159027 \$125.00 | £104.00 ebook 9781400848898



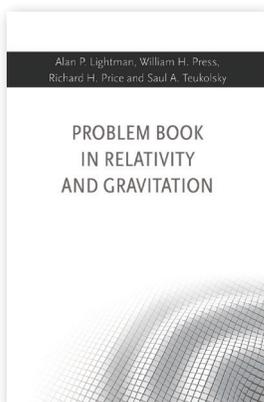
## Gravitation

*Gravitation* is a landmark graduate-level textbook that presents Einstein's general theory of relativity and offers a rigorous, full-year course on the physics of gravitation. Upon publication, *Science* called it "a pedagogic masterpiece," and it has since become a classic, considered essential reading for every serious student and researcher.

**Charles W. Misner** is professor emeritus of physics at the University of Maryland. **Kip S. Thorne** is the Feynman Professor Emeritus of Theoretical Physics at the California Institute of Technology.

**John Archibald Wheeler** (1911–2008) was professor of physics at Princeton University and later at the University of Texas, Austin.

2017. 1280 pages.  
 Hardback 9780691177793 \$60.00 | £50.00 ebook 9781400889099

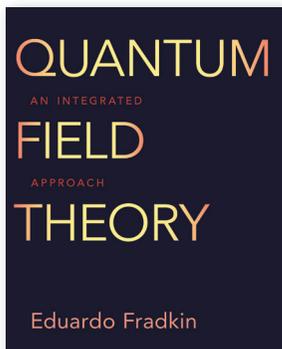


## Problem Book in Relativity and Gravitation

Important and useful to every student of relativity, this book is a unique collection of some 475 problems—with solutions—in the fields of special and general relativity, gravitation, relativistic astrophysics, and cosmology. The problems are expressed in broad physical terms to enhance their pertinence to readers with diverse backgrounds.

**Alan P. Lightman, William H. Press, Richard H. Price & Saul A. Teukolsky**

2017. 616 pages.  
 Paperback 9780691177786 \$49.95 | £42.00 ebook 9781400889013

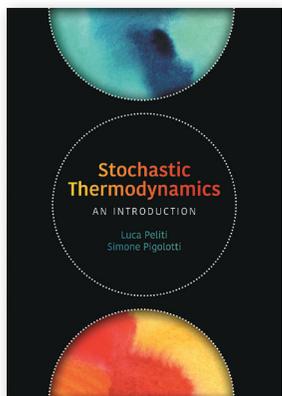


## Quantum Field Theory

Quantum field theory was originally developed to describe quantum electrodynamics and other fundamental problems in high-energy physics, but today has become an invaluable conceptual and mathematical framework for addressing problems across physics, including in condensed-matter and statistical physics. This comprehensive textbook provides a fully “multicultural” approach to quantum field theory, covering the full breadth of its applications in one volume.

**Eduardo Fradkin** is the Donald Biggar Willett Professor of Physics at the University of Illinois, Urbana-Champaign.

March 2021. 760 pages. 161 b/w illus.  
 Hardback 9780691149080 \$85.00 | £70.00 ebook 9780691189550

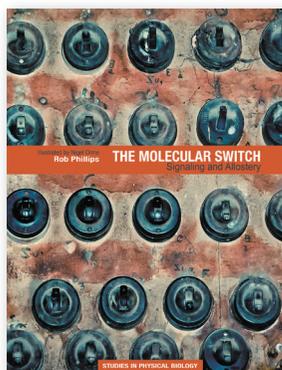


## Stochastic Thermodynamics

This textbook provides an up-to-date pedagogical introduction to stochastic thermodynamics, guiding readers from basic concepts in statistical physics, probability theory, and thermodynamics to the most recent developments in the field. Appropriate for graduate students in physics and biophysics, as well as researchers, *Stochastic Thermodynamics* serves as an excellent initiation to this rapidly evolving field.

**Luca Peliti** is deputy director of the Santa Marinella Research Institute and professor emeritus of statistical mechanics at the University of Naples Federico II. **Simone Pigolotti** is associate professor at the Okinawa Institute of Science and Technology.

June 2021. 272 pages. 46 b/w illus.  
 Hardback 9780691201771 \$75.00 | £62.00 ebook 9780691215525



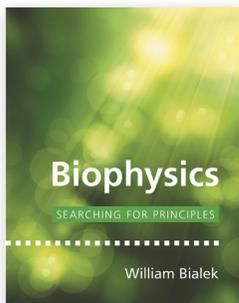
## The Molecular Switch

A signature feature of living organisms is their ability to carry out purposeful actions by taking stock of the world around them. To that end, cells have an arsenal of signaling molecules linked together in signaling pathways, which switch between inactive and active conformations. *The Molecular Switch* articulates a biophysical perspective on signaling, showing how allostery can be reformulated using equilibrium statistical mechanics, applied to diverse biological systems exhibiting switching behaviors, and successfully unify seemingly unrelated phenomena.

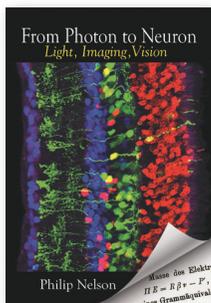
**Rob Phillips** is the Fred and Nancy Morris Professor of Biophysics and Biology at the California Institute of Technology.

2020. 440 pages. 351 color illus.  
 Hardback 9780691200248 \$85.00 | £70.00 ebook 9780691200255

TEXTBOOKS & FEATURED MONOGRAPHS



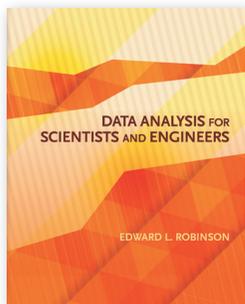
**Biophysics**  
 William Bialek  
 Cloth 9780691138916 \$99.95 | £82.00  
 ebook 9781400845576, 9781400847068



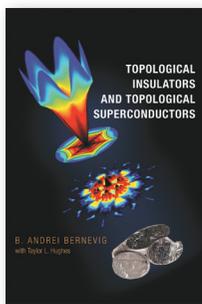
**From Photon to Neuron**  
 Philip Nelson  
 Paper 9780691175195 \$49.50 | £42.00  
 ebook 9781400885480



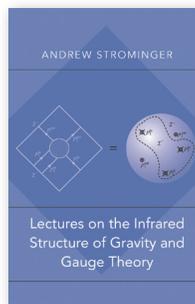
**A Student's Guide to Python  
 for Physical Modeling**  
 Jesse M. Kinder & Philip Nelson  
 Paper 9780691180571 \$24.95 | £22.00  
 ebook 9781400889426



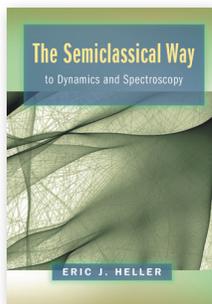
**Data Analysis for Scientists  
 and Engineers**  
 Edward L. Robinson  
 Cloth 9780691169927 \$75.00 | £62.00  
 ebook 9781400883066



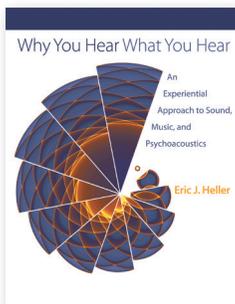
**Topological Insulators and  
 Topological Superconductors**  
 B. Andrei Bernevig  
 with Taylor L. Hughes  
 Cloth 9780691151755 \$97.50 | £82.00  
 ebook 9781400846733, 9781400847501



**Lectures on the Infrared Structure  
 of Gravity and Gauge Theory**  
 Andrew Strominger  
 Paper 9780691179735 \$49.95 | £42.00  
 ebook 9781400889853



**The Semiclassical Way to  
 Dynamics and Spectroscopy**  
 Eric J. Heller  
 Cloth 9780691163734 \$99.50 | £82.00  
 ebook 9781400890293



**Why You Hear What You Hear**  
 Eric J. Heller  
 Cloth 9780691148595 \$120.00 | £100.00  
 ebook 9781400845583



**Physics and Technology  
 for Future Presidents**  
 Richard A. Muller  
 Cloth 9780691135045 \$69.95 | £58.00  
 ebook 9781400835317

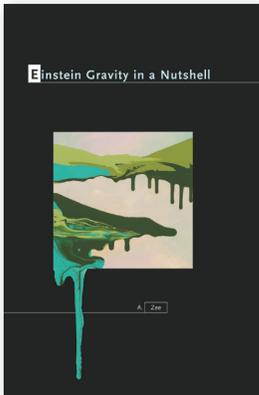


## Group Theory in a Nutshell for Physicists

Although group theory is a mathematical subject, it is indispensable to many areas of modern theoretical physics. What has been missing is a modern, accessible, and self-contained textbook on the subject written especially for physicists. *Group Theory in a Nutshell for Physicists* fills this gap, providing a user-friendly and classroom-tested text that focuses on those aspects of group theory physicists most need to know.

**A. Zee** is professor of physics at the Kavli Institute for Theoretical Physics at the University of California, Santa Barbara.

2016. 608 pages. 63 b/w illus.  
 Hardback 9780691162690 \$90.00 | £74.00 ebook 9781400881185

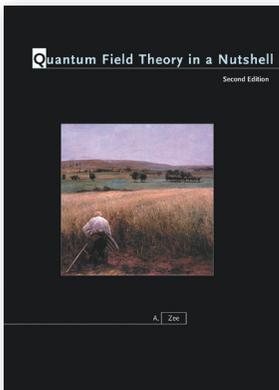


## Einstein Gravity in a Nutshell

This unique textbook provides an accessible introduction to Einstein's general theory of relativity, a subject of breathtaking beauty and supreme importance in physics. With his trademark blend of wit and incisiveness, A. Zee guides readers from the fundamentals of Newtonian mechanics to the most exciting frontiers of research today. Zee treats various topics in a spiral style that is easy on beginners, and includes anecdotes from the history of physics that will appeal to students and experts alike.

**A. Zee** is professor of physics at the Kavli Institute for Theoretical Physics at the University of California, Santa Barbara.

2013. 888 pages. 200 b/w illus.  
 Hardback 9780691145587 \$99.95 | £82.00 ebook 9781400847532



## Quantum Field Theory in a Nutshell

Since it was first published, *Quantum Field Theory in a Nutshell* has quickly established itself as the most accessible and comprehensive introduction to this profound and deeply fascinating area of theoretical physics. Now in this fully revised and expanded edition, A. Zee covers the latest advances while providing a solid conceptual foundation for students to build on.

**A. Zee** is professor of physics at the Kavli Institute for Theoretical Physics at the University of California, Santa Barbara.

2010. 608 pages. 95 b/w illus.  
 Hardback 9780691140346 \$85.00 | £70.00 ebook 9781400850587

IN A NUTSHELL



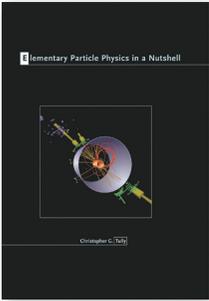
**Astrophysics in a Nutshell**  
 Dan Maoz  
 Cloth 9780691164793 \$85.00 | £70.00  
 ebook 9781400881178



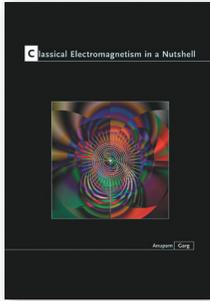
**String Theory in a Nutshell**  
 Elias Kiritsis  
 Cloth 9780691155791 \$95.00 | £78.00  
 ebook 9780691188966



**The Standard Model in a Nutshell**  
 Dave Goldberg  
 Cloth 9780691167596 \$85.00 | £70.00  
 ebook 9781400885473



**Elementary Particle Physics in a Nutshell**  
 Christopher G. Tully  
 Cloth 9780691131160 \$97.50 | £82.00  
 ebook 9781400839353



**Classical Electromagnetism in a Nutshell**  
 Anupam Garg  
 Cloth 9780691130187 \$115.00 | £95.00  
 ebook 9781400842759



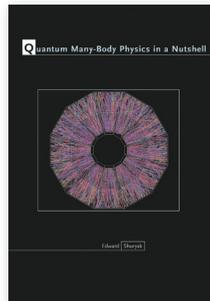
**Statistical Mechanics in a Nutshell**  
 Luca Peliti  
 Cloth 9780691145297 \$99.95 | £82.00  
 ebook 9781400839360



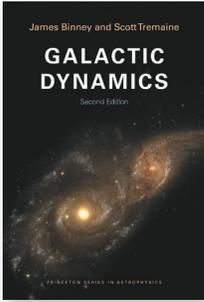
**Condensed Matter in a Nutshell**  
 Gerald D. Mahan  
 Cloth 9780691140162 \$105.00 | £88.00  
 ebook 9781400837021, 9781400850570



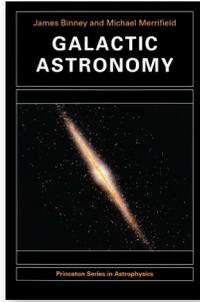
**Quantum Mechanics in a Nutshell**  
 Gerald D. Mahan  
 Cloth 9780691137131 \$105.00 | £88.00  
 ebook 9781400833382



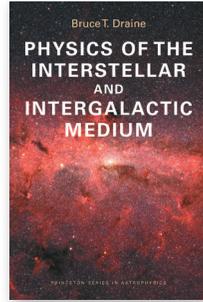
**Quantum Many-Body Physics in a Nutshell**  
 Edward Shuryak  
 Cloth 9780691175607 \$75.00 | £62.00  
 ebook 9780691184968



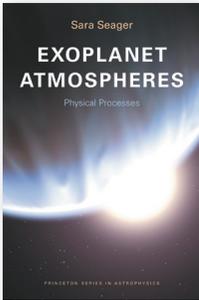
**Galactic Dynamics**  
James Binney & Scott Tremaine  
Paper 9780691130279 \$105.00 | £88.00  
ebook 9781400828722



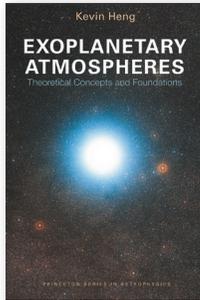
**Galactic Astronomy**  
James Binney & Michael Merrifield  
Paper 9780691025650 \$105.00 | £88.00



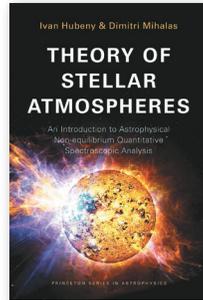
**Physics of the Interstellar and Intergalactic Medium**  
Bruce T. Draine  
Paper 9780691122144 \$87.50 | £74.00  
ebook 9781400839087, 9781400847327



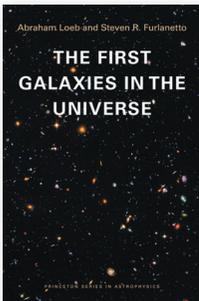
**Exoplanet Atmospheres**  
Sara Seager  
Paper 9780691146454 \$62.50 | £52.00  
ebook 9781400835300



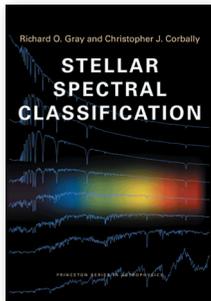
**Exoplanetary Atmospheres**  
Kevin Heng  
Paper 9780691166988 \$65.00 | £54.00  
ebook 9781400883073



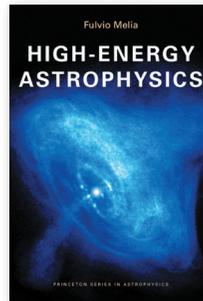
**Theory of Stellar Atmospheres**  
Ivan Hubeny & Dimitri Mihalas  
Paper 9780691163291 \$95.00 | £78.00  
ebook 9781400852734



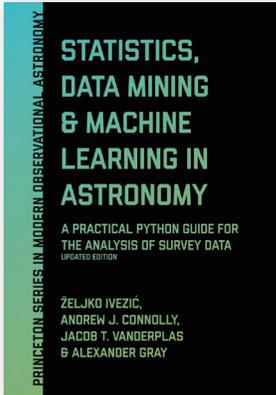
**The First Galaxies in the Universe**  
Abraham Loeb & Steven R. Furlanetto  
Paper 9780691144924 \$97.50 | £82.00  
ebook 9781400845606, 9781400847112



**Stellar Spectral Classification**  
Richard O. Gray & Christopher J. Corbally  
Paper 9780691125114 \$87.50 | £74.00  
ebook 9781400833368



**High-Energy Astrophysics**  
Fulvio Melia  
Paper 9780691140292 \$95.00 | £78.00  
ebook 9781400833375

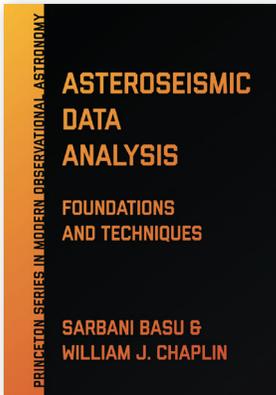


## Statistics, Data Mining, and Machine Learning in Astronomy

*Statistics, Data Mining, and Machine Learning in Astronomy* is the essential introduction to the statistical methods needed to analyze complex data sets. Now fully updated, it presents a wealth of practical analysis problems, evaluates the techniques for solving them, and explains how to use various approaches for different types and sizes of data sets.

**Željko Ivezić, Andrew J. Connolly, Jacob T. VanderPlas & Alexander Gray**

2019. 560 pages. 12 color + 187 b/w illus. 13 tables.  
 Hardback 9780691198309 \$85.00 | £70.00 ebook 9780691197050



## AsteroSeismic Data Analysis

Studies of stars and stellar populations, and the discovery and characterization of exoplanets, are being revolutionized by new satellite and telescope observations of unprecedented quality and scope. *AsteroSeismic Data Analysis* gives a comprehensive technical introduction to this discipline. This book not only helps students and researchers learn about asteroSeismology; it also serves as an essential instruction manual for those entering the field.

**Sarbani Basu** is a professor in the Department of Astronomy at Yale University. **William J. Chaplin** is a professor in the School of Physics and Astronomy at the University of Birmingham.

2017. 352 pages. 159 b/w illus. 2 tables.  
 Hardback 9780691162928 \$75.00 | £62.00 ebook 9781400888207



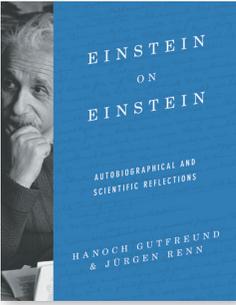
## Essential Radio Astronomy

*Essential Radio Astronomy* is the only textbook on the subject specifically designed for a one-semester introductory course for advanced undergraduates or graduate students in astronomy and astrophysics. It starts from first principles in order to fill gaps in students' backgrounds and provide a useful reference to the essential equations used by practitioners.

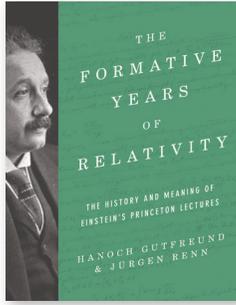
**James J. Condon** and **Scott M. Ransom** are astronomers at the National Radio Astronomy Observatory and research professors of astronomy at the University of Virginia.

2016. 376 pages. 16 color + 155 b/w illus. 5 tables.  
 Hardback 9780691137797 \$85.00 | £70.00 ebook 9781400881161

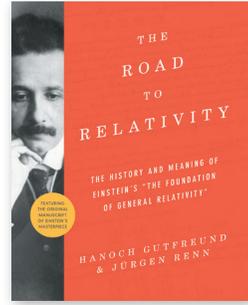
**ALBERT EINSTEIN**



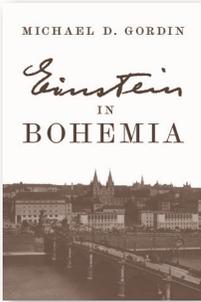
**Einstein on Einstein**  
Hanoch Gutfreund & Jürgen Renn  
Cloth 9780691183602 \$35.00 | £30.00  
ebook 9780691200118



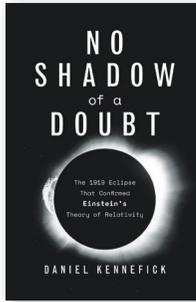
**The Formative Years of Relativity**  
Hanoch Gutfreund & Jürgen Renn  
Cloth 9780691174631 \$35.00 | £30.00  
ebook 9781400888689



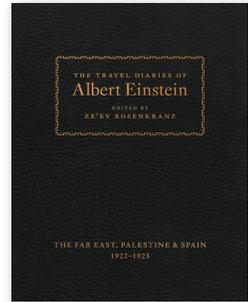
**The Road to Relativity**  
Hanoch Gutfreund & Jürgen Renn  
Paper 9780691175812 \$22.95 | £18.99  
ebook 9781400865765



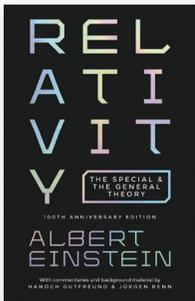
**Einstein in Bohemia**  
Michael D. Gordin  
Cloth 9780691173733 \$29.95 | £25.00  
ebook 9780691199849



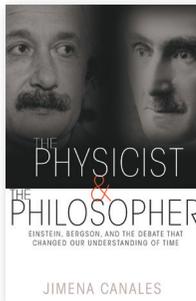
**No Shadow of a Doubt**  
Daniel Kennefick  
Paper 9780691217154 \$19.95 | £16.99  
ebook 9780691190051



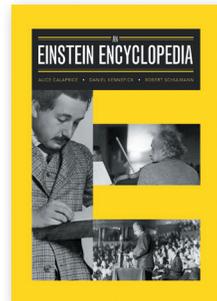
**The Travel Diaries of Albert Einstein**  
Albert Einstein  
Cloth 9780691174419 \$29.95 | £25.00  
ebook 9781400889952



**Relativity**  
Albert Einstein  
Paper 9780691191812 \$16.95 | £13.99  
ebook 9780691193588



**The Physicist and the Philosopher**  
Jimena Canales  
Paper 9780691173177 \$24.95 | £22.00  
ebook 9781400865772



**An Einstein Encyclopedia**  
Alice Calaprice, Daniel Kennefick & Robert Schulmann  
Paper 9780691180847 \$24.95 | £22.00  
ebook 9781400873364

**Volume 1**

The Early Years: 1879–1902  
 1987. 504 pages.  
 Cloth 9780691084077 \$165.00 | £136.00  
 Paper translation  
 Paper 9780691084756 \$69.95 | £58.00

**Volume 2**

The Swiss Years:  
 Writings, 1900–1909  
 1990. 696 pages.  
 Cloth 9780691085265 \$165.00 | £136.00  
 Paper translation  
 Paper 9780691085494 \$63.00 | £52.00

**Volume 3**

The Swiss Years:  
 Writings, 1909–1911  
 1994. 550 pages.  
 Cloth 9780691087726 \$165.00 | £136.00  
 Paper translation  
 Paper 9780691102504 \$69.95 | £58.00

**Volume 4**

The Swiss Years:  
 Writings, 1912–1914  
 1996. 328 pages.  
 Cloth 9780691037059 \$165.00 | £136.00  
 Paper translation  
 Paper 9780691026107 \$69.95 | £58.00

**Volume 5**

The Swiss Years:  
 Correspondence, 1902–1914  
 1995. 384 pages.  
 Cloth 9780691033228 \$165.00 | £136.00  
 Paper translation  
 Paper 9780691000992 \$72.50 | £60.00

**Volume 6**

The Berlin Years:  
 Writings, 1914–1917  
 1997. 464 pages.  
 Cloth 9780691010861 \$165.00 | £136.00  
 Paper translation  
 Paper 9780691017341 \$69.95 | £58.00

**Volume 7**

The Berlin Years:  
 Writings, 1918–1921  
 2002. 728 pages.  
 Cloth 9780691057170 \$165.00 | £136.00  
 Paper translation  
 Paper 9780691057187 \$69.95 | £58.00

**Volume 8**

The Berlin Years:  
 Correspondence, 1914–1918  
 1998. 1232 pages. Two volumes. 15 illus.  
 Cloth 9780691048499 \$299.95 | £246.00  
 Paper translation  
 Paper 9780691048413 \$99.95 | £82.00

**Volume 9**

The Berlin Years: Correspondence,  
 January 1919–April 1920  
 2004. 776 pages. 15 b/w illus.  
 Cloth 9780691120881 \$165.00 | £136.00  
 Paper translation  
 Paper 9780691121246 \$69.95 | £58.00

**Volume 10**

The Berlin Years: Correspondence,  
 May–December 1920, and  
 Supplementary Correspondence,  
 1909–1920  
 2006. 768 pages. 38 b/w illus.  
 Cloth 9780691128252 \$165.00 | £136.00  
 Paper translation  
 Paper 9780691128269 \$69.95 | £58.00

**Volume 11**

Cumulative Index, Bibliography,  
 List of Correspondence, Chronology,  
 and Errata to Volumes 1–10  
 2009. 664 pages.  
 Cloth 9780691141879 \$165.00 | £136.00

**Volume 12**

Documentary Edition  
 The Berlin Years: Correspondence,  
 January–December 1921  
 2009. 712 pages. 24 b/w illus.  
 Cloth 9780691141909 \$165.00 | £136.00  
 Paper translation  
 Paper 9780691141916 \$205.00 | £170.00

**Volume 13**

Documentary Edition  
 The Berlin Years:  
 Writings & Correspondence,  
 January 1922–March 1923  
 2012. 1080 pages. 24 b/w illus.  
 Cloth 9780691156736 \$175.00 | £144.00  
 Paper translation  
 Paper 9780691156743 \$55.00 | £46.00

**Volume 14**

Documentary Edition  
 The Berlin Years:  
 Writings & Correspondence,  
 April 1923–May 1925  
 2015. 1208 pages.  
 Cloth 9780691164106 \$145.00 | £120.00  
 Paper translation  
 Paper 9780691164229 \$46.95 | £40.00

**Volume 15**

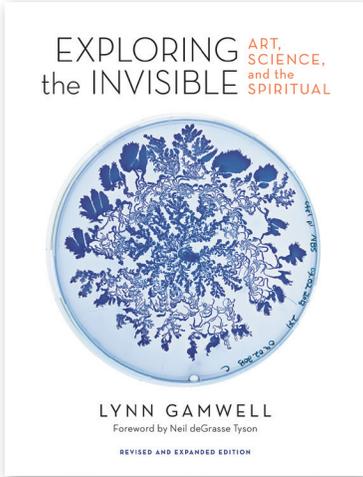
Documentary Edition  
 The Berlin Years:  
 Writings & Correspondence,  
 June 1925–May 1927  
 2018. 1192 pages. 30 b/w illus.  
 Cloth 9780691178813 \$140.00 | £115.00  
 Paper translation  
 Paper 9780691178820 \$45.00 | £38.00

**Volume 16**

Documentary Edition  
 The Berlin Years:  
 Writings & Correspondence,  
 June 1927–May 1929  
 April 2021. 1152 pages. 30 b/w illus.  
 Cloth 9780691216812 \$200.00 | £164.00  
 Paper Translation  
 Paper 9780691216829 \$45.00 | £38.00

## The Digital Einstein Papers

*The Digital Einstein Papers* is an exciting new free, open-access website that puts *The Collected Papers of Albert Einstein* online for the very first time, bringing the writings of the twentieth century’s most influential scientist to a wider audience than ever before. This unique, authoritative resource provides full public access to the complete transcribed, annotated, and translated contents of each print volume of *The Collected Papers*. The volumes are published by Princeton University Press, sponsored by the Hebrew University of Jerusalem, and supported by the California Institute of Technology. The contents of each new volume will be added to the website approximately eighteen months after print publication. Eventually, the website will provide access to all of Einstein’s writings and correspondence accompanied by scholarly annotation and apparatus, which are expected to fill thirty volumes.



How science changed the way artists understand reality

## Exploring the Invisible

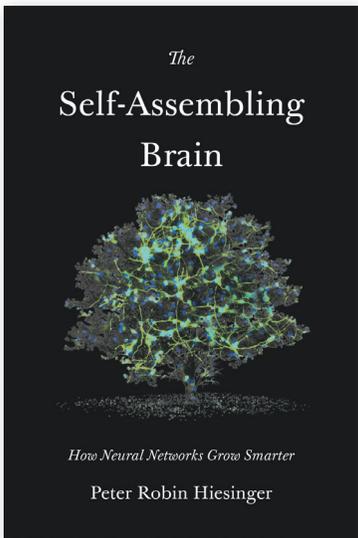
*Exploring the Invisible* shows how modern art expresses the first secular, scientific worldview in human history. Now fully revised and expanded, this richly illustrated book describes two hundred years of scientific discoveries that inspired French Impressionist painters and Art Nouveau architects, as well as Surrealists in Europe, Latin America, and Japan.

With a foreword by Neil deGrasse Tyson and a wealth of stunning images, this expanded edition of *Exploring the Invisible* draws on the latest scholarship to provide a global perspective on the scientists and artists who explore life on Earth, human consciousness, and the space-time universe.

**Lynn Gamwell** is a lecturer in the history of art, science, and mathematics at the School of Visual Arts in New York.

**Neil deGrasse Tyson** is director of the Hayden Planetarium at the American Museum of Natural History.

2020. 528 pages. 332 color + 183 b/w illus.  
Hardback 9780691191058 \$49.95 | £42.00



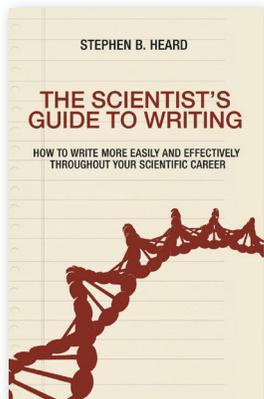
What neurobiology and artificial intelligence tell us about how the brain builds itself

## The Self-Assembling Brain

How does a neural network become a brain? While neurobiologists investigate how nature accomplishes this feat, computer scientists interested in artificial intelligence strive to achieve this through technology. *The Self-Assembling Brain* tells the stories of both fields, exploring the historical and modern approaches taken by the scientists pursuing answers to the quandary: What information is necessary to make an intelligent neural network?

**Peter Robin Hiesinger** is professor of neurobiology at the Institute for Biology, Freie Universität Berlin.

May 2021. 296 pages. 49 b/w illus.  
Hardback 9780691181226 \$29.95 | £25.00 ebook 9780691215518

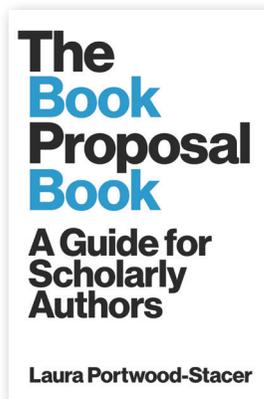


## The Scientist's Guide to Writing

The ability to write clearly is critical to any scientific career. *The Scientist's Guide to Writing* provides practical advice to help scientists become more effective writers so that their ideas have the greatest possible impact. Drawing on his own experience as a scientist, graduate adviser, and editor, Stephen Heard explains essential techniques that students, postdoctoral researchers, and early-career scientists need to write more clearly, efficiently, and easily.

**Stephen B. Heard** is professor of biology at the University of New Brunswick in Canada.

2016. 320 pages, 17 tables.  
Paperback 9780691170220      \$21.95 | £18.99      ebook 9781400881147

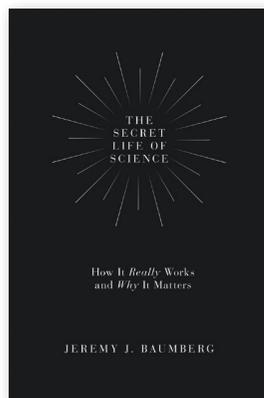


## The Book Proposal Book

The scholarly book proposal may be academia's most mysterious genre. You have to write one to get published, but most scholars receive no training on how to do so. *The Book Proposal Book* cuts through the mystery and guides prospective authors step by step through the process of crafting a compelling proposal and pitching it to university presses and other academic publishers.

**Laura Portwood-Stacer**, PhD, is a developmental editor and founder of Manuscript Works, a consultancy serving authors around the world.

Skills for Scholars  
July 2021. 184 pages, 1 b/w illus.  
Paperback 9780691209678      \$19.95 | £16.99  
Hardback 9780691215723      \$75.00 | £62.00      ebook 9780691216621



## The Secret Life of Science

We take the advance of science as given. But how does science really work? Is it truly as healthy as we tend to think? How does the system itself shape what scientists do? *The Secret Life of Science* takes a clear-eyed and provocative look at the current state of global science, shedding light on a cutthroat and tightly tensioned enterprise that even scientists themselves often don't fully understand.

**Jeremy J. Baumberg** is professor of nanotechnology and photonics in the Cavendish Laboratory at the University of Cambridge.

2018. 248 pages, 41 b/w illus.  
Hardback 9780691174358      \$29.95 | £25.00      ebook 9781400889303



## **[press.princeton.edu](http://press.princeton.edu)**

For individuals in the US, Canada, Latin America, and Asia wishing to place credit card orders, please order via our website at [www.press.princeton.edu](http://www.press.princeton.edu). We cannot accept orders placed via mail or e-mail out of concern for the confidentiality of credit card information. For queries about orders already placed on our website, please contact our distributor, Ingram Publisher Services, toll-free (in North America only) at 844-841-0258 or via e-mail at [ordersupport@ingramcontent.com](mailto:ordersupport@ingramcontent.com). Reps are available from 8 am–5 pm CST, Monday–Friday to take your call.

Orders in the US, Canada, Latin America, and Asia fulfilled by Ingram Content Group LLC (One Ingram Blvd., La Vergne, TN 37086). Orders in the UK, Europe, Africa, India, Pakistan, and the Middle East fulfilled by John Wiley & Sons, Ltd. (European Distribution Centre, New Era Estate, Oldlands Way, Bognor Regis, West Sussex, PO22 9NQ, United Kingdom).

**Stay connected for the latest books, Ideas, and special offers: [press.princeton.edu/subscribe](http://press.princeton.edu/subscribe)**



**The World According to Physics (Al-Khalili)**

Translation, Audio, and Serial

**What Does a Black Hole Look Like? (Bailyn)**

Translation, Audio, Film/TV, and Serial

**Asteroseismic Data Analysis (Basu & Chaplin)**

Translation, Audio, Film/TV, and Serial

**The Secret Life of Science (Baumberg)**

Translation, Audio, Film/TV, and Serial

**Topological Insulators and Topological Superconductors (Bernevig)**

Translation, Audio, Film/TV, and Serial

**Biophysics (Bialek)**

Translation, Audio, Film/TV, and Serial

**Galactic Astronomy (Binney & Merrifield)**

Translation, Audio, Film/TV, and Serial

**Galactic Dynamics (Binney & Tremaine)**

Translation, Audio, Film/TV, and Serial

**What Are Gamma-Ray Bursts? (Bloom)**

Translation, Audio, Film/TV, and Serial

**Einstein Was Right (Buchwald)**

Translation, Audio, Film/TV, and Serial

**Science, the Endless Frontier (Bush)**

Translation, Audio, Film/TV, and Serial

**An Einstein Encyclopedia (Calaprice et al.)**

Translation, Audio, Film/TV, and Serial

**Bedeveled (Canales)**

Serial

**The Physicist and the Philosopher (Canales)**

Translation, Audio, Film/TV, and Serial

**Essential Radio Astronomy**

**(Condon & Ransom)**

Translation, Audio, Film/TV, and Serial

**Nano Comes to Life (Contera)**

Translation, Audio, Film/TV, and Serial

**Physics of the Interstellar and Intergalactic Medium (Draine)**

Translation, Audio, Film/TV, and Serial

**Relativity (Einstein)**

Translation, Audio, Film/TV, and Serial

**The Collected Papers of Albert Einstein, Volume 16 (Documentary Edition)**

(Einstein)

Translation, Film/TV, and Serial

**The Collected Papers of Albert Einstein, Volume 16 (Translation Supplement)**

(Einstein)

Translation, Film/TV, and Serial

**The Meaning of Relativity (Einstein)**

Translation, Audio, Film/TV, and Serial

**The Travel Diaries of Albert Einstein (Einstein)**

Translation, Audio, Film/TV, and Serial

**QED (Feynman)**

Translation, Audio, Film/TV, and Serial

**Quantum Field Theory (Fradkin)**

Translation, Audio, Film/TV, and Serial

**Searching for the Oldest Stars (Frebel)**

Serial and Audio

**Exploring the Invisible (Gamwell)**

Translation, Audio, and Serial

**Classical Electromagnetism in a Nutshell (Garg)**

Translation, Audio, Film/TV, and Serial

**The Standard Model in a Nutshell (Goldberg)**

Translation, Audio, and Serial

**Einstein in Bohemia (Gordin)**

Translation, Audio, Film/TV, and Serial

**Stellar Spectral Classification**

**(Gray & Corbally)**

Translation, Audio, Film/TV, and Serial

**The Little Book of String Theory (Gubser)**

Translation, Audio, and Serial

**The Little Book of Black Holes**

**(Gubser & Pretorius)**

Translation, Audio, and Serial

**The Formative Years of Relativity**

**(Gutfreund & Renn)**

Translation, Audio, Film/TV, and Serial

**The Road to Relativity (Gutfreund & Renn)**

Translation, Audio, Film/TV, and Serial

**Alien Oceans (Hand)**

Translation, Audio, Film/TV, and Serial

**Dark Data (Hand)**

Audio and Serial

**The Nature of Space and Time**

(Hawking & Penrose)

Translation, Audio, Film/TV, and Serial

**The Scientist's Guide to Writing (Heard)**

Translation, Audio, Film/TV, and Serial

**The Semiclassical Way to Dynamics and Spectroscopy (Heller)**

Translation, Audio, Film/TV, and Serial

**Why You Hear What You Hear (Heller)**

Translation, Audio, Film/TV, and Serial

**Exoplanetary Atmospheres (Heng)**

Translation, Audio, Film/TV, and Serial

**The Self-Assembling Brain (Hiesinger)**

Translation, Audio, Film/TV, and Serial

**At the Edge of Time (Hooper)**

Translation and Serial

**How to Walk on Water and Climb up Walls (Hu)**

Translation, Audio, Film/TV, and Serial

**Theory of Stellar Atmospheres**

(Hubeny & Mihalas)

Translation, Audio, Film/TV, and Serial

**Statistics, Data Mining, and Machine Learning in Astronomy (Ivezić et al.)**

Translation, Audio, Film/TV, and Serial

**How Do You Find an Exoplanet? (Johnson)**

Translation, Audio, Film/TV, and Serial

**No Shadow of a Doubt (Kennefick)**

Translation, Audio, Film/TV, and Serial

**Millions, Billions, Zillions (Kernighan)**

Translation, Audio, Film/TV, and Serial

**A Student's Guide to Python for Physical Modeling (Kinder & Nelson)**

Translation, Audio, Film/TV, and Serial

**String Theory in a Nutshell (Kiritsis)**

Translation, Audio, Film/TV, and Serial

**The Extravagant Universe (Kirshner)**

Translation, Audio, Film/TV, and Serial

**Can the Laws of Physics Be Unified? (Langacker)**

Translation, Audio, Film/TV, and Serial

**Problem Book in Relativity and Gravitation (Lightman et al.)**

Translation, Audio, Film/TV, and Serial

**How Did the First Stars and Galaxies Form? (Loeb)**

Translation, Audio, Film/TV, and Serial

**The First Galaxies in the Universe (Loeb & Furlanetto)**

Translation, Audio, Film/TV, and Serial

**Condensed Matter in a Nutshell (Mahan)**

Translation, Audio, Film/TV, and Serial

**Quantum Mechanics in a Nutshell (Mahan)**

Translation, Audio, Film/TV, and Serial

**Astrophysics in a Nutshell (Maoz)**

Translation, Audio, Film/TV, and Serial

**High-Energy Astrophysics (Melia)**

Translation, Audio, Film/TV, and Serial

**It's About Time (Mermin)**

Translation, Audio, Film/TV, and Serial

**Gravitation (Misner et al.)**

Translation, Audio, Film/TV, and Serial

**Physics and Technology for Future Presidents (Muller)**

Translation, Audio, Film/TV, and Serial

**From Photon to Neuron (Nelson)**

Translation, Audio, Film/TV, and Serial

**Reinventing Discovery (Nielsen)**

Audio, Film/TV, and Serial

**Deep Life (Onstott)**

Translation, Audio, Film/TV, and Serial

**Why Trust Science? (Oreskes)**

Translation, Audio, Film/TV, and Serial

**The Little Book of Cosmology (Page)**

Translation, Audio, Film/TV, and Serial

**Cosmology's Century (Peebles)**

Translation, Audio, Film/TV, and Serial

**Principles of Physical Cosmology (Peebles)**

Translation, Audio, Film/TV, and Serial

**Quantum Mechanics (Peebles)**

Translation, Audio, Film/TV, and Serial

**The Large-Scale Structure of the Universe (Peebles)**

Translation, Audio, Film/TV, and Serial

**Statistical Mechanics in a Nutshell (Peliti)**

Audio, Film/TV, and Serial

**Stochastic Thermodynamics (Peliti & Pigolotti)**

Translation, Audio, Film/TV, and Serial

**The Molecular Switch (Phillips)**

Translation, Audio, Film/TV, and Serial

**The Book Proposal Book (Portwood-Stacer)**

Translation, Audio, and Serial

**On the Future (Rees)**

Translation, Audio, Film/TV, and Serial

**Our Cosmic Habitat (Rees)**

Translation, Audio, Film/TV, and Serial

**Einstein on Einstein (Renn & Gutfreund)**

Translation, Audio, Film/TV, and Serial

**Data Analysis for Scientists and Engineers (Robinson)**

Translation, Audio, Film/TV, and Serial

**Exoplanet Atmospheres (Seager)**

Translation, Audio, Film/TV, and Serial

**Quantum Many-Body Physics in a Nutshell (Shuryak)**

Translation, Audio, Film/TV, and Serial

**Lectures on the Infrared Structure of Gravity and Gauge Theory (Strominger)**

Translation, Audio, Film/TV, and Serial

**Modern Classical Physics (Thorne)**

Translation, Audio, Film/TV, and Serial

**Elasticity and Fluid Dynamics (Thorne & Blandford)**

Translation, Audio, Film/TV, and Serial

**Optics (Thorne & Blandford)**

Translation, Audio, Film/TV, and Serial

**Plasma Physics (Thorne & Blandford)**

Translation, Audio, Film/TV, and Serial

**Relativity and Cosmology (Thorne & Blandford)**

Translation, Audio, Film/TV, and Serial

**Statistical Physics (Thorne & Blandford)**

Translation, Audio, Film/TV, and Serial

**Things Fall Together (Tibbitts)**

Translation, Audio, Film/TV, and Serial

**Elementary Particle Physics in a Nutshell (Tully)**

Translation, Audio, Film/TV, and Serial

**Welcome to the Universe (Tyson et al.)**

Translation, Audio, and Serial

**Life on Mars (Weintraub)**

Translation, Audio, Film/TV, and Serial

**Einstein Gravity in a Nutshell (Zee)**

Translation, Audio, Film/TV, and Serial

**Fearful Symmetry (Zee)**

Translation, Audio, Film/TV, and Serial

**Fly by Night Physics (Zee)**

Translation, Audio, Film/TV, and Serial

**Group Theory in a Nutshell for Physicists (Zee)**

Translation, Audio, Film/TV, and Serial

**On Gravity (Zee)**

Translation, Audio, Film/TV, and Serial

**Quantum Field Theory in a Nutshell (Zee)**

Translation, Audio, Film/TV, and Serial