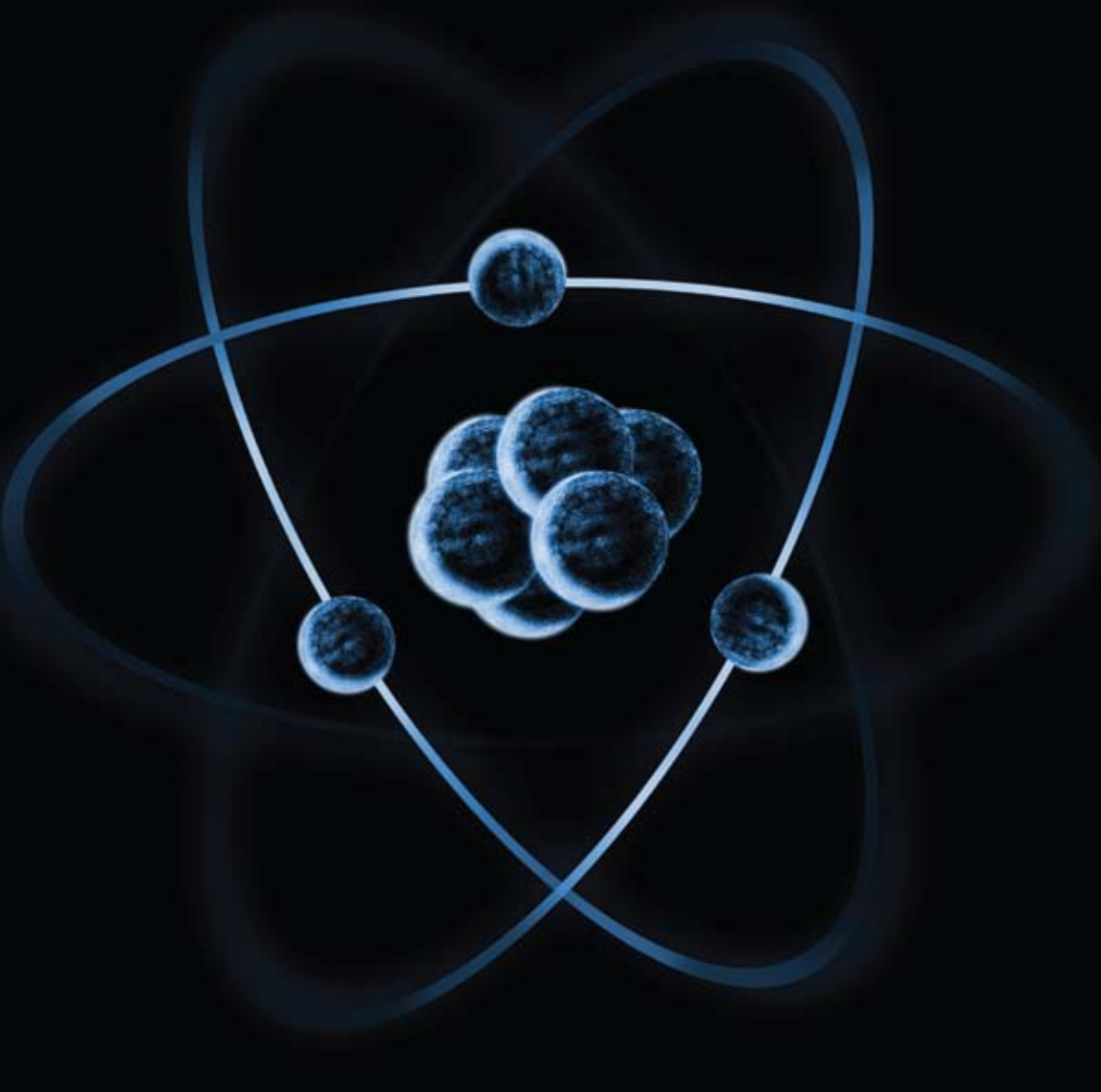


Physics & Astrophysics
2009



Letter from the Editor

Dear reader,

This year's catalog holds a rich store of new books. Our trade science list in particular boasts a collection of riveting works by superb authors. Don't miss Peter Ward's groundbreaking *Medea Hypothesis: Is Life on Earth Ultimately Self-Destructive?*, one of the most recent additions to our prestigious, popular-level *Science Essentials* series. In this book, Ward poses an electrifying new hypothesis and effectively redefines our understanding of the fundamental nature of life and its relationship to the planet Earth. Not since his famous *Rare Earth* has Ward published such an ambitious work—one that will tear down existing paradigms, startle experts into debate, and inspire readers from every background to reevaluate their concept of life and our place in the universe. Similarly provocative, and also part of the *Science Essentials* series, is David Archer's *The Long Thaw: How Humans Are Changing the Next 100,000 Years of Earth's Climate*. Archer shows how, for the first time, humans have become major players in shaping the long-term climate, causing a climate storm that will last several hundred years, and dramatic climate changes that will last thousands.

Another stimulating addition to the trade science list is Sébastien Balibar's charming *The Atom and the Apple: Twelve Tales from Contemporary Physics*, which explains how one of the best ways of coming to understand some of the most mind-bending puzzles of physics is to simply look a little more deeply at the seemingly mundane. And, sure to entertain and provoke, Robert Park's *Superstition: Belief in the Age of Science* skewers the forces of unreason with sharp-edged science. Finally, Lawrence Weinstein and John Adam teach you how to unlock the power of approximation in *Guesstimation: Solving the World's Problems on the Back of a Cocktail Napkin*.

We also have a number of exciting additions to our list of texts and professional level works. The latest title in our burgeoning *Nutshell* series has just arrived—Gerald Mahan's outstanding graduate-level text, *Quantum Mechanics in a Nutshell*—and the newest additions to the *Princeton Series in Astrophysics* are also here—Fulvio Melia's landmark text, *High-Energy Astrophysics*, and Richard Gray and Christopher Corbally's valuable survey of the field, *Stellar Spectral Classification*.

Princeton University Press and I would like to thank you—our readers, authors, and editors—for your enduring support. We sincerely hope that you enjoy the new books in this catalog and that you will continue to let us know what you would like to see in the future.

With very best wishes,

Ingrid Gnerlich

Senior Editor, Physical & Earth Sciences

Ingrid_Gnerlich@press.princeton.edu

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Nuclear Physics in a Nutshell

Carlos A. Bertulani

See page 9 for details.

String Theory in a Nutshell

Elias Kiritsis

See page 9 for details.



Astrophysics in a Nutshell

Dan Maoz

See page 5 for details.

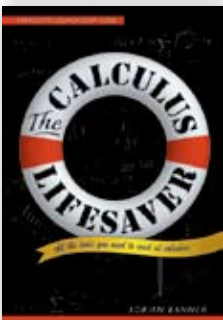


Mathematics for Physics and Physicists

Walter Appel

Translated by
Emmanuel Kowalski

See page 21 for details.



The Calculus Lifesaver

All the Tools You Need to
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Adrian Banner

Princeton Lifesaver Study Guide

2007. 752 pages. 350 line illus.

Pa: 978-0-691-13088-0 \$24.95 | £14.95

Forthcoming

Quantum Mechanics in a Nutshell

Gerald D. Mahan

See page 14 for details.

Quantum Field Theory in a Nutshell

A. Zee

See page 14 for details.

New

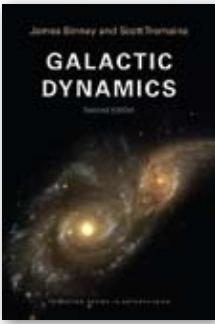
Feedback Systems

An Introduction for
Scientists and Engineers

**Karl J. Åström &
Richard M. Murray**

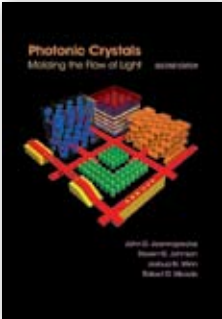
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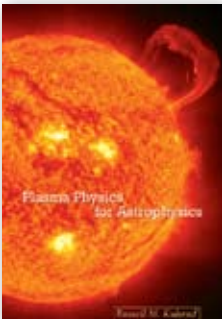
New Second Edition
Galactic Dynamics
James Binney & Scott Tremaine

See page 6 for details.



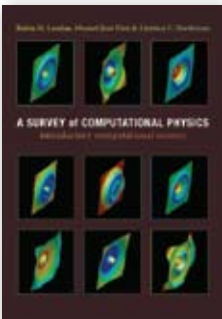
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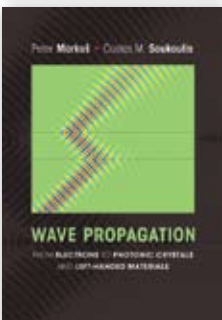
Plasma Physics for Astrophysics
Russell M. Kulsrud

See page 7 for details.



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 Symbolic, Graphic, and Numeric Modeling Using Maple, Java, Mathematica, and Fortran90
Rubin H. Landau

See page 21 for details.



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Forthcoming
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Fulvio Melia

See page 6 for details.

New Paperback
It's About Time
 Understanding Einstein's Relativity
N. David Mermin

See page 9 for details.

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Angela B. Shiflet & George W. Shiflet

See page 21 for details.

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Topics in Mathematical Modeling
K. K. Tung

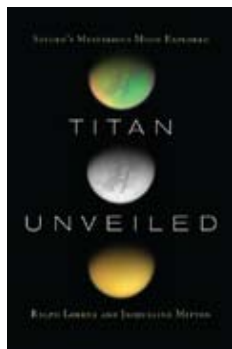
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New

Titan Unveiled

Saturn's Mysterious Moon Explored

Ralph Lorenz & Jacqueline Mitton



"*Titan Unveiled* describes how most of what we once hypothesized about Titan has been proved wrong. The story of how we gained our current knowledge is fascinating; even more intriguing is what remains to be learned."

—Henry Roe, *Nature*

Generously illustrated with many stunning images, *Titan Unveiled* is essential reading for anyone interested in space exploration, planetary science, or astronomy.

Ralph Lorenz is a planetary scientist at the Johns Hopkins University Applied Physics Laboratory. Jacqueline Mitton is a writer, editor, and media consultant in astronomy.

2008. 272 pages. 19 color illus. 65 halftones. 21 line illus. 2 tables.
Cl: 978-0-691-12587-9 \$29.95 | £17.95

New

Beyond UFOs

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"Bennett walks us through the daunting calculations that lead to the conclusion that the existence of life elsewhere is not only possible, but highly likely. But as we wonder where else life exists and what forms it might take, scientists are forced back to more

fundamental questions. What is the nature of life itself? Will we know it if we see it? Bennett offers a host of lessons here not only about global warming and environmental degradation, but our place in the universe as well."

—Matthew Battles, *Boston Globe*

Jeffrey Bennett is an astrophysicist, author, and educator.

2008. 240 pages. 8 color illus. 25 halftones.
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New

Named a 2008 Editors' Choice for Best Adult Titles, *Booklist*

The Universe in a Mirror

The Saga of the Hubble Space Telescope and the Visionaries Who Built It

Robert Zimmerman



"Must reading for armchair astrophysicists."
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"A fascinating inside look at how the great observatory came to be."
—David Shiga, *New Scientist*

The Universe in a Mirror tells the story of the Hubble Space Telescope and the visionaries responsible for its extraordinary accomplishments.

Robert Zimmerman is an award-winning science writer and historian whose work has appeared in *Natural History*, the *Wall Street Journal*, and *Astronomy*, among other leading publications.

2008. 328 pages. 25 color illus. 24 halftones. 2 line illus.
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New

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W. Patrick McCray is professor of history at the University of California, Santa Barbara.

2008. 328 pages. 34 halftones. 4 line illus.
Cl: 978-0-691-12854-2 \$29.95 | £17.95

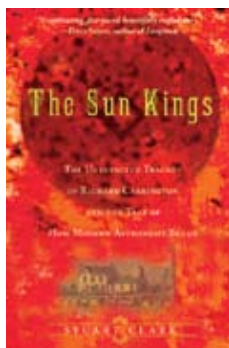
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Stuart Clark is a former editor of the United Kingdom's best-selling astronomy magazine, *Astronomy Now*.

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—Martin Ince, *Times Higher Education Supplement*

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

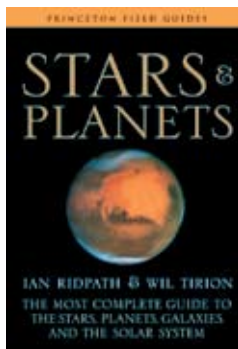
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Ian Ridpath is the author or editor of more than forty books. Wil Tirion is the world's leading celestial mapmaker.

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Richard O. Gray is professor of astronomy at Appalachian State University. Christopher J. Corbally, SJ, is a vice director of the Vatican Observatory and adjunct associate professor of astronomy at the University of Arizona.

April 2009. 592 pages. 280 line illus.

Pa: 978-0-691-12511-4

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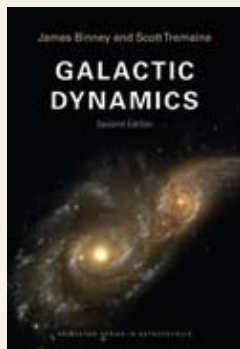
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Fulvio Melia is professor of physics and astronomy at the University of Arizona and associate editor of the *Astrophysical Journal Letters*.

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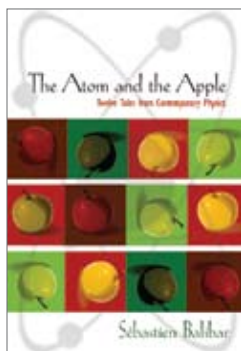
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Sébastien Balibar



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—Tony Leggett,
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Urbana-Champaign

The Atom and the Apple considers aspects of our environment—the things we see around us, but seldom truly understand—and shows that science can be an exciting adventure grounded in the phenomena of the daily world.

Sébastien Balibar is professor of physics at the École Normale Supérieure in Paris.

2008. 200 pages. 9 halftones. 10 line illus.
Cl: 978-0-691-13108-5 \$24.95 | £14.95

New

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Robert L. Park



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—Michael Shermer, publisher of the *Skeptic* and author of *Why Darwin Matters*

In *Superstition*, Robert Park asks why people persist in superstitious convictions long after science has shown them to be ill-founded.

Robert L. Park is professor of physics at the University of Maryland.

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Lawrence Weinstein is professor of physics at Old Dominion University. John A. Adam is professor of mathematics at Old Dominion University.

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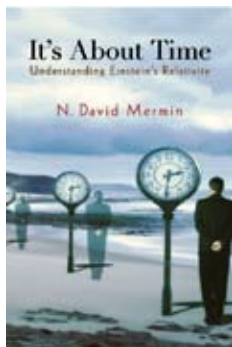
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—Derek Raine, *Nature*

N. David Mermin is a member of the National Academy of Sciences and won the first Julius Edgar Lilienfeld Prize of the American Physical Society.

July 2009. 208 pages. 13 halftones. 43 line illus. 1 table.

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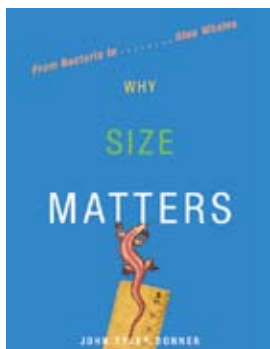
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TEXT

Carlos A. Bertulani



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—Savas Dimopoulos, Stanford University

In a Nutshell

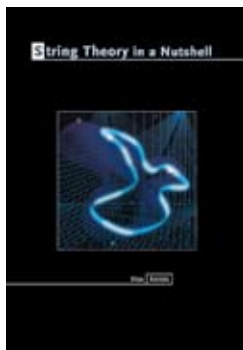
2007. 488 pages. 50 line illus. 118 tables.

Cl: 978-0-691-12505-3 \$65.00 | £38.95

String Theory in a Nutshell

Elias Kiritsis

TEXT



"An excellent reference for any graduate student interested in string theory. Kiritsis succinctly describes many of the recent developments that are necessary background to current research. Topics covered include

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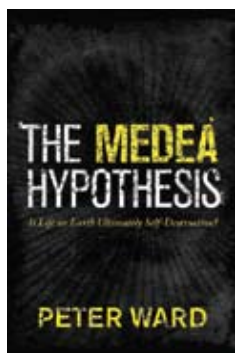
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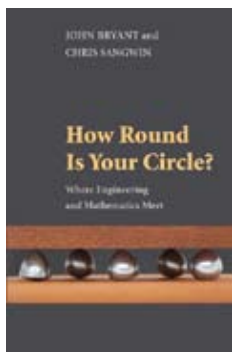
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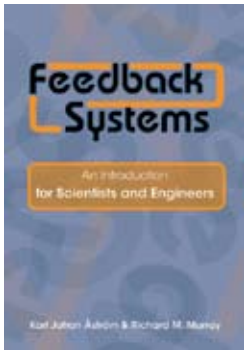
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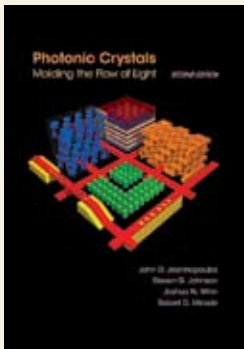
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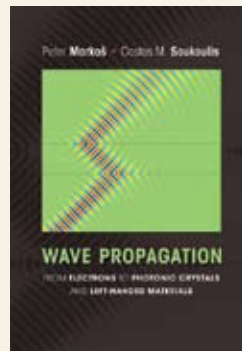
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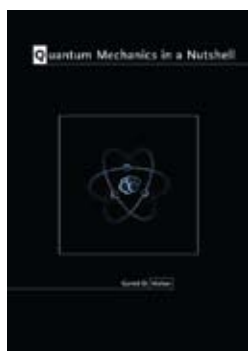
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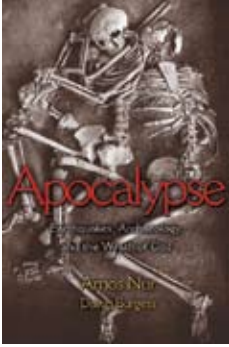
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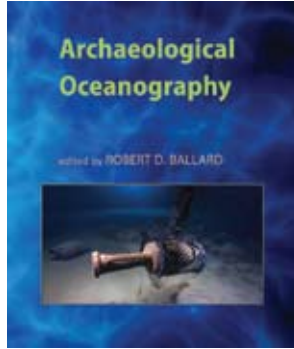
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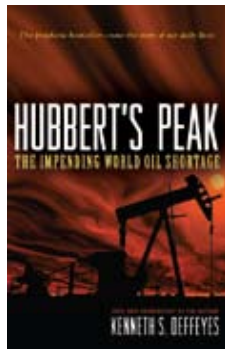
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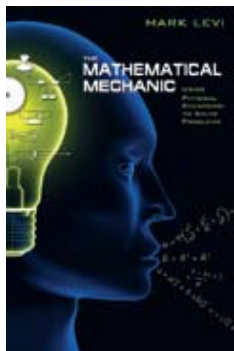
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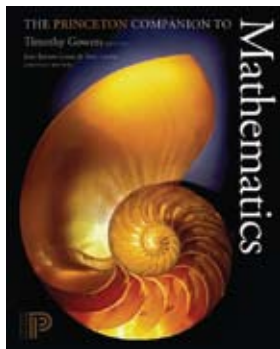
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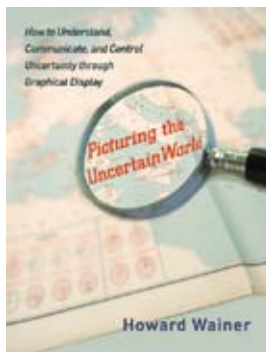
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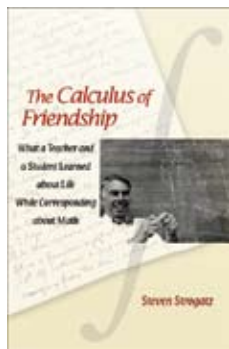
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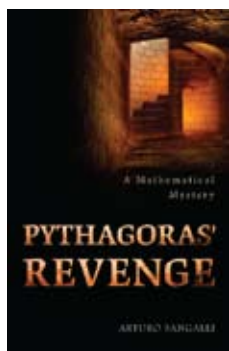
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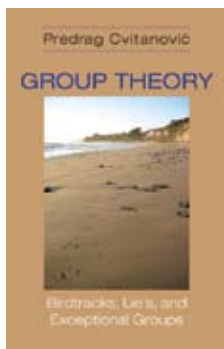
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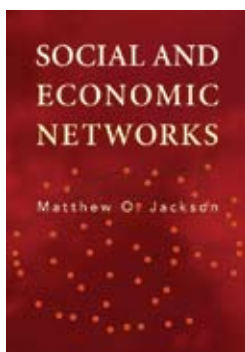
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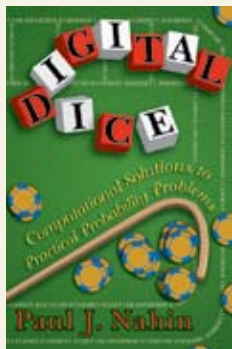
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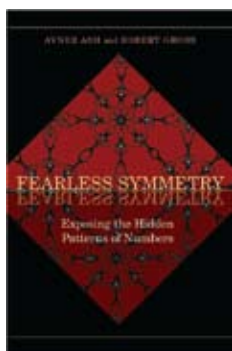
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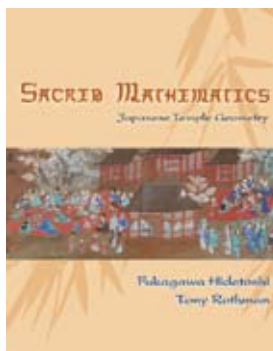
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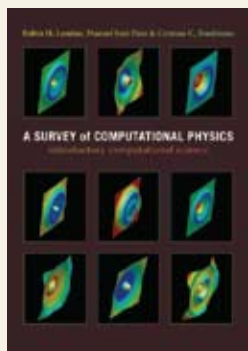
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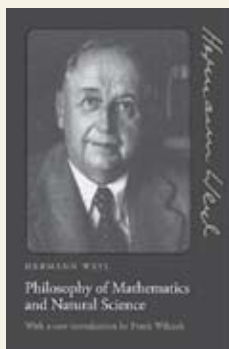
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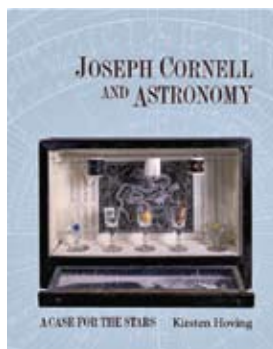
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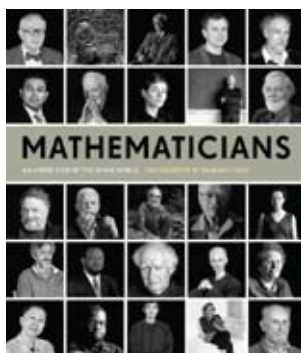
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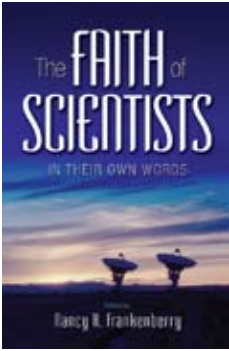
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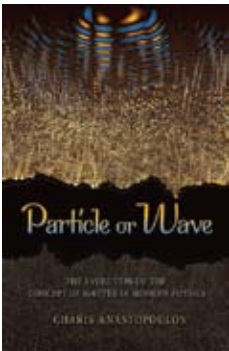
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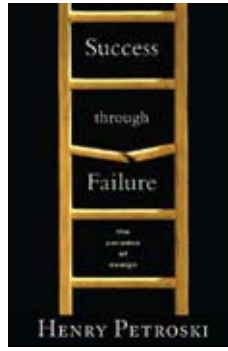
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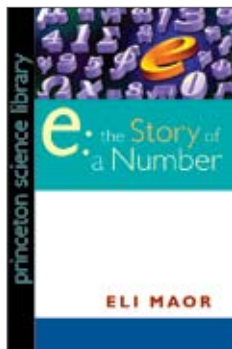
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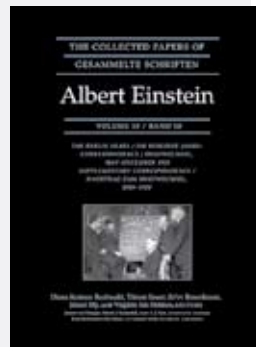
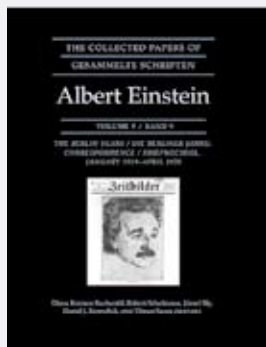
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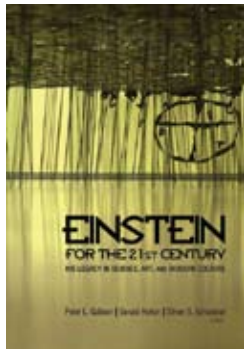


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