

last paragraph deals with a naive iterative solution to Poisson's equation, suggesting that a self-consistent interior solution can be achieved through its application. To be sure, there are exceptions. The author's treatment of nuclear processes is very complete, and he excels at describing some developments of the past decade or so, including a reasonably complete discussion of supernovae. These topics tend to be found toward the back of the book.

However, I was surprised to find no reference to *Supernovae* (Springer-Verlag, 1991) edited by Stan Woolsey, or to Woolsey's subsequent models. The inclusion of white dwarfs, novae and supernovae in the same chapter is yet another example of the book's heterogeneous organization.

In short, the astronomy that the physics of this book was meant to address is missing. While Rose's discussion of certain topics may be useful in

a presentation of this subject, the many errors, omissions and compressions make it unsuitable as a text for a course in stellar astrophysics. A balanced course will still have to rely on previous works.

GEORGE W. COLLINS II
Ohio State University
Columbus, Ohio

NEW BOOKS

Biophysics and Medical Physics

Introductory Medical Statistics. *Medical Science Series*. 3rd edition. R. F. Mould. IOP, Philadelphia, 1998 [1976]. 403 pp. \$49.00 pb ISBN 0-7503-0513-4

Magnetic Resonance Imaging: Mathematical Foundations and Applications. W. J. Schempp. Wiley-Liss, New York, 1998. 288 pp. \$89.95 hc ISBN 0-471-16736-3

Mathematical Physiology. *Interdisciplinary Applied Mathematics* 8. J. Keener, J. Sneyd. Springer-Verlag, New York, 1998. 766 pp. \$69.95 hc ISBN 0-387-98381-3

The Rainbow and the Worm: The Physics of Organisms. 2nd edition. M.-W. Ho. World Scientific, River Edge, N.J., 1998. 282 pp. \$36.00 hc (\$18.00 pb) ISBN 981-02-3426-0 hc (981-02-3427-9 pb)

Chemical Physics

Advances in Chemical Physics. *Advances in Chemical Physics* 104. I. Prigogine, S. A. Rice, eds. Wiley, New York, 1998. 311 pp. \$125.00 hc ISBN 0-471-29338-5

The CH/ π Interaction: Evidence, Nature, and Consequences. *Methods in Stereochemical Analysis*. M. Nishio, M. Hirota, Y. Umezawa. Wiley-VCH, New York, 1998. 217 pp. \$90.00 hc ISBN 0-471-25290-5

Primary Photoexcitations in Conjugated Polymers: Molecular Exciton versus Semiconductor Band Model. N. S. Sariciftci, ed. World Scientific, River Edge, N.J., 1997. 621 pp. \$86.00 hc ISBN 981-02-2880-5

Reviews in Computational Chemistry, Vol. 12. K. B. Lipkowitz, D. B. Boyd, eds. Wiley-VCH, New York, 1998. 404 pp. \$120.00 hc ISBN 0-471-24671-9

Structure and Transport Properties in Organized Polymeric Materials. *World Scientific Series in Contemporary Chemical Physics* 11. E. Chiellini, M. Giordano, D. Leporini, eds. World Scientific, River Edge, N.J., 1997. 339 pp. \$162.00 hc ISBN 981-02-1894-X

Traces of the Past: Unraveling the Secrets of Archaeology through Chemistry. J. B. Lambert. Helix Books (Perseus Books), Reading, Mass., 1998 [reissue of 1997 hc]. 319 pp. \$18.00 pb ISBN 0-7382-0027-1

Computers and Computational Physics

Algorithms and Data Structures in VLSI Design: OBDD—Foundations and Applications. C. Meinel, T. Theobald. Springer-Verlag, New York, 1998. 267 pp.

Scheme

One Touch RAMAN

- Switch lasers with one touch
- Customize parameters
- XYZ molecular mapping

If you are interested in

- Materials Research
- Forensics
- Semiconductors
- Pharmaceuticals

Contact us for more information.

JOBIN YVON - SPEX - DILOR
HORIBA Group

1-800-438-7739
www.isainc.com

In the USA:
Instruments S.A., Inc.
Jobin Yvon / Spex Division
3880 Park Avenue
Edison, NJ 08820
Tel: 1-732-494-8660
Fax: 1-732-549-5125

In France:
Instruments S.A.
Jobin Yvon / Spex Division
16-18, rue du Canal
91165 Longjumeau cedex
Tel: (33) 1/64.54.13.00
Fax: (33) 1/69.09.93.19

email: raman@isainc.com
Germany: 49 (62) 518 47 50
Italy: 2/57.60.30.50
The U.K.: 0181/204.81.42

See us at Pittcon, Booth #1600 and at APS, Booth #712
Circle number 49 on Reader Service Card

\$49.95 pb ISBN 3-540-64486-5

The Computational Beauty of Nature: Computer Explorations of Fractals, Chaos, Complex Systems, and Adaptation. G. W. Flake. MIT Press, Cambridge, Mass., 1998. 493 pp. \$45.00 hc ISBN 0-262-06200-3

Condensed Matter Physics

Concepts in Solids: Lectures on the Theory of Solids. P. W. Anderson. World Scientific, River Edge, N.J., 1997. 188 pp. \$24.00 hc (\$12.00 pb) ISBN 981-02-3195-4 hc (981-02-3231-4 pb)

Green's Functions for Solid State Physicists: A Reprint Volume with Additional Material on the Physics of Correlated Electron Systems. Revised edition. S. Doniach, E. H. Sondheimer. Imperial College Press (World Scientific), River Edge, N.J., 1998 [1974]. 317 pp. \$74.00 hc (\$38.00 pb) ISBN 1-86094-078-1 hc (1-86094-080-3 pb)

Group III Nitride Semiconductor Compounds: Physics and Applications. *Series on Semiconductor Science and Technology* 6. B. Gil, ed. Oxford U. P., New York, 1998. 470 pp. \$145.00 hc ISBN 0-19-850159-5

Macroscopic Quantum Tunneling of the Magnetic Moment. *Cambridge Studies in Magnetism* 4. E. M. Chudnovsky, J. Tejada. Cambridge U. P., New York, 1998. 173 pp. \$54.95 hc ISBN 0-521-47404-3

Optical Properties of Low-Dimensional Materials, Vol. 2. T. Ogawa, Y. Kanemitsu, eds. World Scientific, River Edge, N.J., 1998. 450 pp. \$86.00 hc ISBN 981-02-3048-6

Photovoltaic Materials. *Series on Properties of Semiconductor Materials* 1. R. H. Bube. Imperial College Press (World Scientific), River Edge, N.J., 1998. 281 pp. \$46.00 hc ISBN 1-86094-065-X

Plasma Etching: Fundamentals and Applications. *Series on Semiconductor Science and Technology* 7. M. Sugawara. Oxford U. P., New York, 1998. 347 pp. \$140.00 hc ISBN 0-19-856287-X

Quantum Wells: Physics and Electronics of Two-Dimensional Systems. A. Shik. World Scientific, River Edge, N.J., 1997. 96 pp. \$16.00 hc ISBN 981-02-3279-9

Simulation of Semiconductor Processes and Devices 1998. Proc. Conf., Leuven, Belgium, Sep. 1998. K. De Meyer, S. Biesemans, eds. Springer-Verlag, New York, 1998. 406 pp. \$109.00 hc ISBN 3-211-83208-4

The Superconducting State in Magnetic Fields: Special Topics and New Trends. *Series on Directions in Condensed Matter Physics* 13. C. A. R. Sá de Melo, ed. World Scientific, River Edge, N.J., 1998. 324 pp. \$78.00 hc (\$38.00 pb) ISBN 981-02-3374-4 hc (981-02-3566-6 pb)

Tunneling in Complex Systems. *Proceedings from the Institute for Nuclear Theory* 5. S. Tomsovic, ed. World Scientific, River Edge, N.J., 1998. 326 pp. \$48.00 hc ISBN 981-02-3446-5

Cosmology and Relativity

Cosmological Special Relativity: The

Large Scale Structure of Space, Time and Velocity. M. Carmeli. World Scientific, River Edge, N.J., 1997. 115 pp. \$18.00 hc ISBN 981-02-3079-6

Gravitation and Relativity: At the Turn of the Millennium. Proc. Conf., Pune, India, Dec. 1997. N. Dadhich, J. Narlikar, eds. Inter-University Centre for Astronomy and Astrophysics, Pune, India, 1998. 510 pp. \$50.00 hc ISBN 81-900378-3-8

Energy and Environment

Erosion and Sedimentation. P. Y. Julien. Cambridge U. P., New York, 1998 [reissue of 1994 hc]. 280 pp. \$29.95 pb ISBN 0-521-63639-6

Stochastic Processes for Water Scientists: Developments and Applications. R. T. Clarke. Wiley, New York, 1998. 183 pp. \$74.95 hc ISBN 0-471-97348-3

Fluids

Dynamical Systems Approach to Turbulence. *Cambridge Nonlinear Science Series* 7. T. Bohr, M. H. Jensen, G. Paladin, A. Vulpiani. Cambridge U. P., New York, 1998. 350 pp. \$85.00 hc ISBN 0-521-47514-7

Mathematical Topics in Fluid Mechanics, Vol. 2: Compressible Models. *Oxford Lecture Series in Mathematics and Its Applications* 10. P.-L. Lions. Oxford U. P., New York, 1998. 348 pp. \$75.00 hc ISBN 0-19-851488-3

Turbulence, Coherent Structures, Dynamical Systems and Symmetry. *Cambridge Monographs on Mechanics.* P. Holmes, J. L. Lumley, G. Berkooz. Cambridge U. P., New York, 1998 [reissue of 1996 hc]. 420 pp. \$34.95 pb ISBN 0-521-63419-9

Geophysics

The Earth's Mantle: Composition, Structure, and Evolution. I. Jackson, ed. Cambridge U. P., New York, 1998. 566 pp. \$130.00 hc ISBN 0-521-56344-5

Fundamentals of Acoustical Oceanography. *Applications of Modern Acoustics.* H. Medwin, C. S. Clay. Academic Press, San Diego, Calif., 1998. 712 pp. \$75.00 hc ISBN 0-12-487570-X

An Introduction to Optical Dating: The Dating of Quaternary Sediments by the Use of Photon-Stimulated Luminescence. M. J. Aitken. Oxford U. P., New York, 1998. 267 pp. \$130.00 hc ISBN 0-19-854092-2

The Rock Physics Handbook: Tools for Seismic Analysis in Porous Media. G. Mavko, T. Mukerji, J. Dvorkin. Cambridge U. P., New York, 1998. 329 pp. \$64.95 hc ISBN 0-521-62068-6

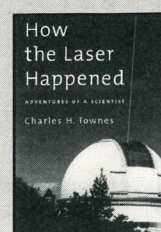
Theoretical Global Seismology. F. A. Dahlen, J. Tromp. Princeton U. P., Princeton, N.J., 1998. 1025 pp. \$80.00 hc (\$45.00 pb) ISBN 0-691-00116-2 hc (0-691-00124-3 pb)

History and Philosophy

The Advancement of Science, and Its Burdens. G. Holton. Harvard U. P., Cambridge, Mass., 1998 [1986]. 352 pp. \$18.95 pb ISBN 0-674-00530-9

Dialogues on Modern Physics. M. Sachs.

OXFORD
UNIVERSITY PRESS



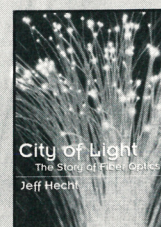
Charles Townes will be signing copies of his book on Monday, March 22, from 1:30-2:30pm at Oxford's booth at the APS meeting in Atlanta.

HOW THE LASER HAPPENED Adventures of a Scientist

Charles H. Townes

"An engaging human story, intertwined with a first-hand account of some of the twentieth century's most significant inventions and discoveries." —Arno Penzias, Nobel Laureate in Physics and former Chief Scientist of Bell Labs.

March 1999 256 pp.; 13 halftones, 1 linecut
\$35.00



CITY OF LIGHT The Story of Fiber Optics

Jeff Hecht

"A marvelous chronicle of fiber optics technology which in large measure has created the Information Age. Jeff Hecht has not only presented the history of this remarkable technology—uncovering threads which I did not know—but captured the drama and human aspects which make this an interesting read for anyone." —Donald B. Keck, Director of Optics & Photonics, Corning, Inc. (*Sloan Technology Series*)

March 1999 336 pp.; 27 b/w plates, 6 halftones, 15 linecuts
\$30.00

THE GEOMETRIC UNIVERSE Science, Geometry, and the Work of Roger Penrose

Edited by S. A. Huggett, L. J. Mason, K. P. Tod, S. T. Tsou, and N. M. J. Woodhouse
Topics include differential geometry, knot invariants, gauge theory, general relativity, and quantum gravity.

1998 456 pp.; 36 linecuts
\$45.00

Visit us at Booth 415
at the APS conference in Atlanta.

OXFORD UNIVERSITY PRESS
198 Madison Avenue, New York, NY 10016.

To order any book by credit card,
call toll-free 1-800-451-7556.

www.oup-usa.org

Circle number 50 on Reader Service Card

World Scientific, River Edge, N.J., 1998. 125 pp. \$48.00 *hc* ISBN 981-02-3191-1

The Geometric Universe: Science, Geometry, and the Work of Roger Penrose. S. A. Huggett, L. J. Mason, K. P. Tod, S. T. Tsou, N. M. J. Woodhouse, eds. Oxford U. P., New York, 1998. 431 pp. \$45.00 *hc* ISBN 0-19-850059-9

An Imaginary Tale: The Story of $\sqrt{-1}$. P. J. Nahin. Princeton U. P., Princeton, N.J., 1998. 257 pp. \$24.95 *hc* ISBN 0-691-02795-1

Insisting on the Impossible: The Life of Edwin Land. *The Sloan Technology Se-*

ries. V. K. McElheny. Perseus Books, Reading, Mass., 1998. 510 pp. \$30.00 *hc* ISBN 0-7382-0009-3

The Natural Philosophy of James Clerk Maxwell. P. M. Harman. Cambridge U. P., New York, 1998. 232 pp. \$59.95 *hc* ISBN 0-521-56102-7

Nevill Mott: Reminiscences and Appreciations. E. A. Davis, ed. Taylor & Francis, Bristol, Pa., 1998. 336 pp. \$45.00 *hc* ISBN 0-7484-0790-1

The Origin of the Third Family. *World Scientific Series in 20th Century Physics* 20.

C. S. Wu, T. D. Lee, N. Cabibbo, V. F. Weisskopf, S. C. C. Ting, C. Villi, M. Conversi, A. Petermann, B. H. Wiik, G. Wolf. World Scientific, River Edge, N.J., 1998. 164 pp. \$38.00 *hc* ISBN 981-02-3163-6

Philosophical Concepts in Physics: The Historical Relation Between Philosophy and Scientific Theories. J. T. Cushing. Cambridge U. P., New York, 1998. 424 pp. \$74.95 *hc* (\$29.95 *pb*) ISBN 0-521-57071-9 *hc* (0-521-57823-X *pb*)

Remembering Edith Alice Müller. *As-trophysics and Space Science Library* 222. I. Appenzeller, Y. Chmielewski, J.-C. Pecker, R. De La Reza, G. Tammann, P. Wayman, eds. Kluwer Academic, Norwell, Mass., 1998. 147 pp. \$99.00 *hc* ISBN 0-7923-4789-7

The Scientific Imagination. G. Holton. Harvard U. P., Cambridge, Mass., 1998 [1978]. 382 pp. \$19.95 *pb* ISBN 0-674-79488-5

Selected Scientific Works of Hans Christian Ørsted. K. Jøved, A. D. Jackson, O. Knudsen, eds. (translated from the Danish by K. Jøved). Princeton U. P., Princeton, N.J., 1998. 647 pp. \$89.50 *hc* ISBN 0-691-04334-5

The Visible and the Invisible: Matter and Mind in Physics. *Series on the Foundations of Natural Science and Technology* 3. W. Schommers. World Scientific, River Edge, N.J., 1998. 246 pp. \$48.00 *hc* ISBN 981-02-3100-8

Instrumentation and Techniques

Computing for Scientists: Principles of Programming with Fortran 90 and C++. *The Manchester Physics Series.* R. J. Barlow, A. R. Barnett. Wiley, New York, 1998. 276 pp. \$105.00 *hc* (\$42.95 *pb*) ISBN 0-471-95114-5 *hc* (0-471-95596-5 *pb*)

Crystallographic Instrumentation. *IUCr Monographs on Crystallography* 7. L. A. Aslanov, G. V. Fetisov, J. A. K. Howard. Oxford U. P., New York 1998. 309 pp. \$125.00 *hc* ISBN 0-19-855927-5

Fundamentals of Electrochemical Deposition. *Electrochemical Society Series.* M. Paunovic, M. Schlesinger. Wiley, New York, 1998. 301 pp. \$64.95 *hc* ISBN 0-471-16820-3

High Resolution Spectroscopy. 2nd edition. J. M. Hollas. Wiley, New York, 1998 [1982]. 743 pp. \$89.95 *hc* ISBN 0-471-97421-8

High Resolution X-Ray Diffractometry and Topography. D. K. Bowen, B. K. Tanner. Taylor & Francis, Bristol, Pa., 1998. 252 pp. \$79.95 *hc* ISBN 0-8506-6758-5

Introduction to Inverse Problems in Imaging. M. Bertero, P. Boccacci. IOP, Philadelphia, 1998. 351 pp. \$149.00 *hc* (\$49.00 *pb*) ISBN 0-7503-0439-1 *hc* (0-7503-0435-9 *pb*)

The Physical Principles of Magneto-optical Recording. M. Mansuripur. Cambridge U. P., New York, 1998 [reissue of 1995 *hc*]. 756 pp. \$54.95 *pb* ISBN 0-521-63418-0

Principles of Chemical and Biological Sensors. *Chemical Analysis* 150. D. Dia-

No Noise Is Good Noise

SR570 Current Preamp

- 5 fA/√Hz input noise
- 1 MHz bandwidth
- 1 pA/V max. sensitivity
- Adjustable bias voltage and input offset current

SR560 Voltage Preamp

- 4 nV/√Hz input noise
- 1 MHz bandwidth
- Gain from 1 to 50,000
- True differential or single-ended input

Low Noise Preamplifiers.....\$1995 (U.S. list)



Designed for low noise signal recovery experiments, the SR560 Voltage Preamplifier and SR570 Current Preamplifier are the industry's standards. These general purpose instruments are ideal for amplifying and conditioning very small signals and offer solutions for a variety of photonic and low temperature applications. Both preamplifiers feature a 1 MHz bandwidth, configurable filters, line or battery operation and an RS-232 computer interface.



Stanford Research Systems
Tel: (408) 744-9040 Fax: (408) 744-9049
Email: info@srsys.com WWW: http://www.srsys.com

APS Show—Booth #516,518

Circle number 52 on Reader Service Card

mond, ed. Wiley, New York, 1998. 334 pp. \$89.95 hc ISBN 0-471-54619-4

Speckle Photography for Fluid Mechanics Measurements. *Experimental Fluid Mechanics.* N. A. Fomin. Springer-Verlag, New York, 1998. 244 pp. \$99.50 hc ISBN 3-540-63767-2

Statistical Data Analysis. *Oxford Science Publications.* G. Cowan. Oxford U. P., New York, 1998. 197 pp. \$65.00 hc (\$35.00 pb) ISBN 0-19-850156-0 hc (0-19-850155-2 pb)

Materials Science

Electronic Materials: The Oligomer Approach. K. Müllen, G. Wegner, eds. Wiley-VCH, New York, 1998. 599 pp. \$145.00 hc ISBN 3-527-29438-4

Handbook of Magnetic Materials, Vol. 11. K. H. J. Buschow, ed. North-Holland (Elsevier Science), Amsterdam, The Netherlands, 1998. 716 pp. \$316.00 hc ISBN 0-444-82956-3

An Introduction to the Mechanical Properties of Ceramics. *Cambridge Solid State Science Series.* D. J. Green. Cambridge U. P., New York, 1998. 336 pp. \$80.00 hc (\$34.95 pb) ISBN 0-521-59087-6 hc (0-521-59913-X pb)

Laser-Assisted Microtechnology. *Springer Series in Materials Science 19.* 2nd edition. S. M. Metev, V. P. Veiko. Springer-Verlag, New York, 1998 [1994]. 270 pp. \$69.95 hc ISBN 3-540-63973-X

Microcluster Physics. *Springer Series in Materials Science 20.* 2nd, completely revised and updated edition. S. Sugano, H. Koizumi. Springer-Verlag, New York, 1998 [1991]. 236 pp. \$79.95 hc ISBN 3-540-63974-8

Texture and Anisotropy: Preferred Orientations in Polycrystals and their Effect on Materials Properties. U. F. Kocks, C. N. Tomé, H.-R. Wenk, authors and eds. Cambridge U. P., New York, 1998. 676 pp. \$100.00 hc ISBN 0-521-46516-8

Nonlinear Science and Chaos

Asymptotic Approaches in Nonlinear Dynamics: New Trends and Applications. *Springer Series in Synergetics.* J. Awrejcewicz, I. V. Andrianov, L. I. Manevitch. Springer-Verlag, New York, 1998. 310 pp. \$79.95 hc ISBN 3-540-63894-6

Elements of Applied Bifurcation Theory. *Applied Mathematical Sciences 112.* 2nd edition. Y. A. Kuznetsov. Springer-Verlag, New York, 1998 [1995]. 591 pp. \$69.95 hc ISBN 0-387-98382-1

Rayleigh-Bénard Convection: Structures and Dynamics. *Advanced Series in Nonlinear Dynamics 11.* A. V. Getling. World Scientific, River Edge, N.J., 1998. 245 pp. \$48.00 hc ISBN 981-02-2657-8

Self-Organized Criticality: Emergent Complex Behavior in Physical and Biological Systems. *Cambridge Lecture Notes in Physics 10.* H. J. Jensen. Cambridge U. P., New York, 1998. 153 pp. \$32.95 pb ISBN 0-521-48371-9

Nuclear Physics

Introductory Nuclear Physics. 2nd edition. S. S. M. Wong. Wiley, New York, 1998 [1989]. 460 pp. \$74.95 hc ISBN 0-471-23973-9

Nuclear Structure, Vol. 1: Single-Particle Motion; Vol. 2: Nuclear Deformations. A. Bohr, B. R. Mottelson. World Scientific, River Edge, N.J., 1998 [1969, reissued]. 1219 pp. \$86.00 set hc ISBN 981-02-3197-0

Optics and Photonics

Applications of High-Field and Short Wavelength Sources. L. DiMauro, M. Murnane, A. L'Huillier, eds. Plenum, New York, 1998. 300 pp. \$110.00 hc ISBN 0-306-45909-4

Nonlinear Optics: Basic Concepts. 2nd, enlarged edition. D. L. Mills. Springer-Verlag, New York, 1998 [1991]. 263 pp. \$42.50 pb ISBN 3-540-64182-3 ■

AFM as it should be!

Both the experienced user looking for a practical AFM without unnecessary complexity and the novice needing an easy-to-use AFM will appreciate Quesant advantages:

- Elegant, compact hardware
- Robust, sophisticated software
- Large sample capability
- Fast image acquisition
- Windows environment
- Source code accessibility
- Best price/performance

Images (top to bottom):

Epitaxial GaN film on sapphire
(4 μ m scan, WaveMode)

Vias in Al₂O₃ layer annealed at 380°C
(30 μ m scan, Contact Mode)

Grain structure of Al₂O₃ on IC device
(10 μ m scan, Contact Mode)

Fast

Easy

Affordable

For more information see our website:
www.quesant.com

 **QUESANT
INSTRUMENT
CORPORATION**

29397 Agoura Road, Suite 104, Agoura Hills, CA 91301; Tel: (818) 597-0311

