

some fundamental definitions and clarity on the subject, in the typical Szebehely fashion. Instead, I found additional confusion. Chaos is not defined and is implied to mean "not predictable" motion or escape in the three-body problem. The concept of chaos introduced is based on the early work by Jack Wisdom on the rotation of Hyperion and long period integrations of the Solar System. (Wisdom is incorrectly identified as being at Caltech rather than MIT.)

The book would be a useful, stand-alone text for a general introductory course in celestial mechanics and space sciences. Because I have been active as a researcher and teacher of celestial mechanics for over 30 years, perhaps I expected too much—based on the previous work and reputations of the authors. Whatever the reason, I was disappointed that the book is not as focused as its predecessor and lacks coverage in the areas of current excitement in celestial mechanics.

P. KENNETH SEIDELMANN
US Naval Observatory
Washington, DC

NEW BOOKS

History and Philosophy

Principles of Geology. C. Lyell. Penguin Books, New York, 1997 [1830–33]. 472 pp. \$15.95 pb ISBN 0-14-043528-X

Science and the Retreat From Reason. J. Gillott, M. Kumar. Monthly Review Press, New York, 1997 [1995, reissued]. 248 pp. \$38.00 hc (\$18.00 pb) ISBN 0-25345-986-X hc (0-85345-987-8 pb)

Scientific Instruments 1500–1900: An Introduction. G. L'E Turner. U. of Calif. P., Berkeley, Calif., 1998. 144 pp. \$40.00 hc ISBN 0-520-21728-4

To Light Such a Candle: Chapters in the History of Science and Technology. K. J. Laidler. Oxford U. P., New York, 1998. 384 pp. \$50.00 hc ISBN 0-19-850056-4

Instrumentation and Techniques

Cumulative Sum Charts and Charting for Quality Improvement. *Statistics for Engineering and Physical Science.* D. M. Hawkins, D. H. Olwell. Springer-Verlag, New York, 1998. 247 pp. \$54.95 hc ISBN 0-387-98365-1

Introduction to Scanning Transmission Electron Microscopy. *Microscopy Handbooks 39.* R. J. Keyse, A. J. Garratt-Reed, P. J. Goodhew, G. W. Lorimer. Bios Scientific Publishers (Springer-Verlag), New York, 1998. 114 pp. \$32.95 pb ISBN 0-387-91517-6

Inverse Problems, Tomography, and Image Processing. Proc. Cong., Newark, Del., Jun. 1997. A. G. Ramm, ed. Plenum, New York, 1998. 258 pp. \$95.00 hc ISBN 0-306-45828-4

Particle Image Velocimetry: A Practical Guide. *Experimental Fluid Mechanics.* M. Raffel, C. E. Willert, J. Kompenhans. Springer-Verlag, New York, 1998. 253 pp. \$79.95 hc ISBN 3-540-63683-8

TeX Unbound: LaTeX & TeX Strategies for Fonts, Graphics, and More. A. Hoenig. Oxford U. P., New York, 1998. 580 pp. \$60.00 hc (\$35.00 pb) ISBN 0-19-509685-1 hc (0-19-509686-X pb)

Materials Science

Electrocatalysis. *Frontiers in Electro-*

chemistry. J. Lipkowski, P. N. Ross, eds. Wiley-VCH, New York, 1998. 376 pp. \$145.00 hc ISBN 0-471-24673-5

Fractals and Fractional Calculus in Continuum Mechanics. *International Centre for Mechanical Sciences Courses and Lectures 378.* A. Carpinteri, F. Mainardi, eds. SpringerWien (Springer-Verlag), New York, 1997. 348 pp. \$80.00 pb ISBN 3-211-82913-X

Large Plastic Deformation of Crystalline Aggregates. *International Centre for Mechanical Sciences Courses and Lectures*

No Noise Is Good Noise

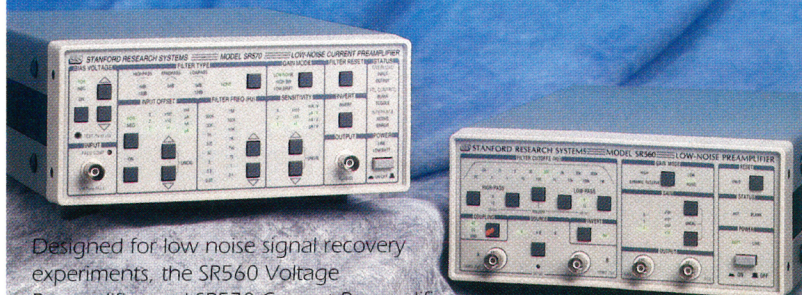
SR570 Current Preamp

- 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>

Circle number 35 on Reader Service Card

376. C. Teodosiu, ed. SpringerWien (Springer-Verlag), New York, 1997. 293 pp. \$72.00 *pb* ISBN 3-211-82909-1

Organic Molecular Solids: Properties and Applications. W. Jones, ed. CRC Press, Boca Raton, Fla., 1997. 426 pp. \$139.95 *hc* ISBN 0-8493-9428-7

Phase Equilibria, Phase Diagrams and Phase Transformations: Their Thermodynamic Basis. M. Hillert. Cambridge U. P., New York, 1998. 538 pp. \$110.00 *hc* (\$44.95 *pb*) ISBN 0-521-56270-8 *hc* (0-521-56584-7 *pb*)

The Physics of Amorphous Solids. R. Zallen. Wiley, New York, 1998 [1983, reissued]. 304 pp. \$44.95 *pb* ISBN 0-471-29941-3

Sliding Friction: Physical Principles and Applications. *NanoScience and Technology.* B. N. J. Persson. Springer-Verlag, New York, 1998. 462 pp. \$79.95 *hc* ISBN 3-540-63296-4

Statistical Physics of Fracture and Breakdown in Disordered Systems. *Monographs on the Chemistry and Physics of Materials 55.* B. K. Chakrabarti, L. G. Benguigui. Clarendon Press (Oxford U. P.), New York, 1997. 161 pp. \$85.00 *hc* ISBN 0-19-852056-5

Nonlinear Science and Chaos

Fractals in Engineering: From Theory to Industrial Applications. J. L. V  hel, E. Lutton, C. Tricot, eds. Springer-Verlag, New York, 1997. 397 pp. \$95.00 *hc* ISBN 3-540-76182-9

A Perspective Look at Nonlinear Media: From Physics to Biology and Social Sciences. *Lecture Notes in Physics 503.* J. Parisi, S. C. M  ller, W. Zimmermann, eds. Springer-Verlag, New York, 1998. 372 pp. \$86.00 *hc* ISBN 3-540-63995-0

Robust Control of Nonlinear Uncertain Systems. *Wiley Series in Nonlinear Science.* Z. Qu. Wiley, New York, 1998. 527 pp. \$84.95 *hc* ISBN 0-471-11589-4

Nuclear Physics

Advances in Nuclear Physics, Vol. 24. J. W. Negele, E. Vogt, eds. Plenum, New York, 1998. 210 pp. \$89.50 *hc* ISBN 0-306-45757-1

Optics and Photonics

Beam Shaping and Control with Nonlinear Optics. *NATO ASI Series B: Physics 369.* F. Kajzar, R. Reinisch, eds. Plenum, New York, 1998. 475 pp. \$145.00 *hc* ISBN 0-306-45902-7

Diffraction Optics for Industrial and Commercial Applications. J. Turunen, F. Wyrowski, eds. Akademie Verlag (Wiley-VCH), Berlin, Germany, 1997. 426 pp. \$124.95 *hc* ISBN 3-05-501733-1

Diode Pumped Solid State (DPSS) Lasers: Applications and Issues. *OSA Trends in Optics and Photonics Series 17.* M. W. Dowley. Optical Society of America, Washington, DC, 1998. 232 pp. \$55.00 *pb* ISBN 1-55752-520-X

Frontiers of Quantum Optics and Laser Physics. Proc. Conf., Hong Kong, Jan.

1997. S. Y. Zhu, M. S. Zubairy, M. O. Scully. Springer-Verlag, New York, 1997. 453 pp. \$69.00 *pb* ISBN 981-3083-32-8

Introduction to Radiometry. *Tutorial Texts in Optical Engineering TT29.* W. L. Wolfe. SPIE, Bellingham, Wash., 1998. 184 pp. \$42.00 *pb* ISBN 0-8194-2758-6

Waves and Grains: Reflections on Light and Learning. M. P. Silverman. Princeton U. P., Princeton, N.J., 1998. 410 pp. \$22.50 *pb* ISBN 0-691-00113-8

Particle Physics

Principles of RF Linear Accelerators. *Wiley Series in Beam Physics and Accelerator Technology.* T. P. Wangler. Wiley, New York, 1998. 382 pp. \$84.95 *hc* ISBN 0-471-16814-9

RF Superconductivity for Accelerators. *Wiley Series in Beam Physics and Accelerator Technology.* H. Padamsee, J. Knobloch, T. Hays. Wiley, New York, 1998. 523 pp. \$79.95 *hc* ISBN 0-471-15432-6

Supersymmetry and Integrable Models. *Lecture Notes in Physics 502.* Proc. Wksp., Chicago, Ill., Jun. 1997. H. Aratyn, T. D. Imbo, W.-Y. Keung, U. Sukhatme, eds. Springer-Verlag, New York, 1998. 379 pp. \$86.00 *hc* ISBN 3-540-63986-1

Plasmas and Fusion

Diagnostics for Experimental Thermonuclear Fusion Reactors 2. Proc. Wksp., Varenna, Italy, Sep. 1997. P. E. Stott, G. Gorini, P. Prandoni, E. Sindoni, eds. Plenum, New York, 1998. 609 pp. \$149.50 *hc* ISBN 0-306-45835-7

Popularizations

Alien Life: The Search for Extraterrestrials and Beyond. B. Parker. Plenum Trade, New York, 1998. 254 pp. \$27.95 *hc* ISBN 0-306-45795-4

Comets: Creators and Destroyers. D. H. Levy. Touchstone (Simon & Schuster), New York, 1998. 256 pp. \$12.00 *pb* ISBN 0-684-85255-1

Cosmic Bullets: High Energy Particles in Astrophysics. R. Clay, B. Dawson. Helix Books (Addison Wesley Longman), Reading, Mass., 1997. 194 pp. \$22.00 *hc* ISBN 0-201-36083-7

A Field Guide to the Invisible. W. Bidle. Henry Holt, New York, 1998. 185 pp. \$23.00 *hc* ISBN 0-8050-5069-8

Gravity's Fatal Attraction: Black Holes in the Universe. M. Begelman, M. Rees. Scientific American, New York, 1998. 246 pp. \$19.95 *pb* ISBN 0-7167-6029-0

The Invisible Sky: Rosat and the Age of X-ray Astronomy. B. Aschenbach, H.-M. Hahn, J. Tr  mper (translated from the German by H. Jenkner). Copernicus (Springer-Verlag), New York, 1998. 175 pp. \$40.00 *hc* ISBN 0-387-94928-3

The Mathematical Tourist: New and Updated Snapshots of Modern Mathematics. I. Peterson. W. H. Freeman, New York, 1998 [1988]. 266 pp. \$14.95 *pb* ISBN 0-7167-3250-5

Prisons of Light—Black Holes. K. Ferguson. Cambridge U. P., New York, 1998

[1996, reissued]. 214 pp. \$25.95 *hc* (\$14.95 *pb*) ISBN 0-521-49518-0 *hc* (0-521-62571-8 *pb*)

Ripples on a Cosmic Sea: The Search for Gravitational Waves. *Frontiers of Science.* D. Blair, G. McNamara. Helix Books (Addison Wesley Longman), Reading, Mass., 1997. 184 pp. \$22.00 *pb* ISBN 0-201-36082-9

The Universe Below: Discovering the Secrets of the Deep Sea. W. J. Broad. Touchstone (Simon & Schuster), New York, 1998 [1997]. 432 pp. \$15.00 *pb* ISBN 0-684-83852-4

The Whole Shebang: A State-of-the-Universe(s) Report. T. Ferris. Touchstone (Simon & Schuster), New York, 1998 [1997]. 393 pp. \$14.00 *pb* ISBN 0-684-83861-3

Theory and Mathematical Methods

Approximations and Numerical Methods for the Solution of Maxwell's Equations. *The Institute of Mathematics & Its Applications Conference New Series 65.* F. El Dabaghi, K. Morgan, K. Parrott, J. Periaux, eds. Oxford U. P., New York, 1998. 390 pp. \$185.00 *hc* ISBN 0-19-851483-2

Continuous-Time Markov Chains and Applications: A Singular Perturbation Approach. *Applications of Mathematics 37.* G. G. Yin, Q. Zhang. Springer-Verlag, New York, 1998. 349 pp. \$59.95 *hc* ISBN 0-387-98244-2

Geometric Methods for Discrete Dynamical Systems. *Oxford Engineering Science Series 50.* R. W. Easton. Oxford U. P., New York, 1998. 157 pp. \$65.00 *hc* ISBN 0-19-508545-0

An Introduction to Global Spectral Modeling. T. N. Krishnamurti, H. S. Bedi, V. M. Hardiker. Oxford U. P., New York, 1998. 253 pp. \$60.00 *hc* ISBN 0-19-509473-5

Inverse Acoustic and Electromagnetic Scattering Theory. *Applied Mathematical Sciences 93.* 2nd edition. D. Colton, R. Kress. Springer-Verlag, New York, 1998 [1992]. 334 pp. \$69.95 *hc* ISBN 3-540-62838-X

Lectures on Nonlinear Hyperbolic Differential Equations. *Math  matiques & Applications 26.* L. H  rmander. Springer-Verlag, New York, 1997. 289 pp. \$32.95 *hc* ISBN 3-540-62921-1

Partial Differential Equations in Classical Mathematical Physics. I. Rubinstein, L. Rubinstein. Cambridge U. P., New York, 1998 [1993]. 677 pp. \$36.95 *pb* ISBN 0-521-55846-8

Quantum Groups and Their Representations. *Texts and Monographs in Physics.* A. Klimyk, K. Schm  dgen. Springer-Verlag, New York, 1997. 552 pp. \$79.95 *hc* ISBN 3-540-63452-5

Spectral and Scattering Theory. A. G. Ramm, ed. Plenum, New York, 1998. 207 pp. \$79.50 *hc* ISBN 0-306-45829-2 ■