607  This Week in Science

Editorial  609  To Lift the Lamp Beside the Research Door


News & Comment  612  Was Galileo Saved by Plea Bargain?
613  The Buried Cost of the Savannah River Plant \ Down on the Sludge Farm
615  Petersdorf to Head Medical Colleges
616  Briefing: House Endorses Pork Barrel Funding \ Britain Offers Plan for Chemical Weapons Verification \ OMB and Congress at Odds Over Cancer Risk Policy \ Britain's Royal Society Condemns Sex Bias in Math Teaching \ New Animal Regulations Causing Scientists Pain and Distress \ Time Inc. Buys Science Digest

Research News  620  Shifting Sentiments Over Sequencing the Human Genome
621  Tracing a Young and Malleable Moho
623  Briefing: Sodium Atoms Trapped with Laser Light \ Laser-Cooling Mercury Ions Via Beryllium \ RNA Plasmid Discovered in Maize Mitochondria

Articles  625  Computing with Neural Circuits: A Model: J. J. Hopfield and D. W. Tank
633  Arctic Research in the National Interest: A. L. Washburn and G. Weller
640  The Use of NMR Spectroscopy for the Understanding of Disease: G. K. Radda

---

SCIENCE is published weekly on Friday, except the last week in December, and with a plus issue in May by the American Association for the Advancement of Science, 1333 H Street, NW, Washington, DC 20005. Second-class postage (publication No. 484480) paid at Washington, DC, and at an additional entry. Now combined with The Scientific Monthly. Copyright © 1986 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription ($1 issues): $65. Domestic institutional subscription ($1 issues): $96. Foreign postage extra: Canada $24, other (surface mail) $27, air-surface via Amsterdam $65. First class, airmail, school-year, and student rates on request. Single copies $2.50 ($3 by mail); back issues $4 ($4.50 by mail); Biotechnology issue, $5.50 ($6 by mail); classroom rates on request; Guide to Biotechnology Products and Instruments $16 ($17 by mail). Change of address: allow 6 weeks, giving old and new addresses and seven-digit account number. Authorization to photocopy material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act is granted by AAAS to libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of $1 per copy plus $0.10 per page is paid directly to CCC, 21 Congress Street, Salem, Massachusetts 01970. The identification code for Science is 0036-8075/86 $1 + .10. Postmaster: Send Form 3579 to Science, 1333 H Street, NW, Washington, DC 20005. Science is indexed in the Reader's Guide to Periodical Literature and in several specialized indexes.

The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objects are to further the work of scientists, to facilitate cooperation among them, to foster scientific freedom and responsibility, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.
Cover    Bell tower of First United Methodist Church in Chatham, Cape Cod, Massachusetts, at dawn (6:26 a.m. on 23 June 1986; solar elevation: 12°35.4′ above horizon; natural illuminance levels: 12,200 lux ambient and 6,300 lux in the line of gaze). Exposure to artificial light of comparable intensity can rapidly reset the human circadian pacemaker by about 6 hours. See page 667. [Charles A. Czeisler, Neuroendocrinology Laboratory, Brigham and Women's Hospital, Harvard Medical School, Boston, MA 02115]

Reports

647 Tandem Regions of Yeast DNA Topoisomerase II Share Homology with Different Subunits of Bacterial Gyrase: R. Lynn, G. Giaever, S. L. Swanberg, J. C. Wang

649 The Oncogenic Activation of Human p21ras by a Novel Mechanism: M. Walter, S. G. Clark, A. D. Levinson

652 Immunoregulatory Feedback Between Interleukin-1 and Glucocorticoid Hormones: H. Beseovsky, A. del Rey, E. Sorokin, C. A. Dinarello


Book Reviews

672 Wild Horses of the Great Basin, reviewed by P. J. Jarman ■ The Miocene Ocean, J. H. Lipps ■ Properties and Interactions of Interplanetary Dust, B. Donn ■ Some Other Books of Interest ■ Books Received

Products & Materials

676 Test Kit for Interleukin-2 ■ Sample Changer for Titrator ■ DNA Recovery from Electrophoresis Gels ■ Personal Supercomputer ■ Fluorometer ■ Fluorescence Microscope ■ Literature