

571 This Week in *Science*

Editorial

573 Research Applications of Lasers: D. F. VOSS

Letters

575 Chernobyl Radiation Dose: M. GOLDMAN ■ Learning Science: C. L. ROBERTS ■
"Progress" in Evolution: F. K. MCKINNEY ■ Skepticism About SDI:
J. P. BLEWETT ■ Ecology of Marine Communities: C. SMITH AND P. JUMARS ■
Infrared Astronomy: J. F. ARENS

News & Comment

591 Thirty Ways to Temporize on Waste
592 Yale Accelerator to Be Dedicated
593 White House Spotlights New Superconductors
594 Nuclear Test Watchers Feel Political Heat
596 Bolivia Swaps Debt for Conservation
597 *Briefing*: Proposed Growth in U.K. Space Budget Rejected ■ Comings and Goings
■ Peer Review and ARS

Research News

598 The Genetics of Personality
599 Measuring Personality
602 Oncogene Action Probed: New Family of Growth Factor Genes Identified ■ *ras*
Oncogene Activated in Human Colon Cancers
604 Compact Discs Shrinking Data Storage Costs

Articles

Lasers in Research

605 Laser Techniques in High-Pressure Geophysics: R. J. HEMLEY, P. M. BELL,
H. K. MAO
612 Laser Spectroscopy of Trapped Atomic Ions: W. M. ITANO, J. C. BERGQUIST,
D. J. WINELAND
618 Hole-Burning Spectroscopy and Relaxation Dynamics of Amorphous Solids at
Low Temperatures: R. JANKOWIAK AND G. J. SMALL

Reports

626 Evidence for Chain Molecules Enriched in Carbon, Hydrogen, and Oxygen in
Comet Halley: D. L. MITCHELL, R. P. LIN, K. A. ANDERSON, C. W. CARLSON,
D. W. CURTIS, A. KORTH, H. RÈME, J. A. SAUVAUD, C. D'USTON *et al.*
628 First Polymer in Space Identified in Comet Halley: W. F. HUEBNER
630 High-Resolution Electron Microscopy and Scanning Tunneling Microscopy of
Native Oxides on Silicon: A. H. CARIM, M. M. DOVEK, C. F. QUATE,
R. SINCLAIR, C. VORST

■ **SCIENCE** is published weekly on Friday, except the last week in December, and with an extra issue in February by the American Association for the Advancement of Science, 1333 H Street, NW, Washington, DC 20005. Second-class postage (publication No. 484460) paid at Washington, DC, and at an additional entry. Now combined with **The Scientific Monthly**® Copyright © 1987 by the American Association for the Advancement of Science. The title **SCIENCE** is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): \$65. Domestic institutional subscription (51 issues): \$98. Foreign postage extra: Canada \$32, 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 0036-8075/83 \$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 Laser spectroscopy of samples in diamond-anvil high-pressure cell. The excitation argon-ion laser (tuned to wavelength of 488 nanometers) is focused by a lens at upper right corner to a 100-nanogram hydrogen sample at a pressure of 30 gigapascals. The optical arrangement is used for Raman scattering, Brillouin scattering, ruby fluorescence, and laser heating at high pressures. See page 605. [Photography by Linda Mao, Fairfax, VA]

- 633 Radioactive Cesium from the Chernobyl Accident in the Greenland Ice Sheet: C. I. DAVIDSON, J. R. HARRINGTON, M. J. STEPHENSON, M. C. MONAGHAN, J. PUDYKIEWICZ, W. R. SCHELL
- 635 *ery*, a Human *ets*-Related Gene on Chromosome 21: Alternative Splicing, Polyadenylation, and Translation: V. N. RAO, T. S. PAPAS, E. S. P. REDDY
- 639 Naturally Acquired Antibodies to Sporozoites Do Not Prevent Malaria: Vaccine Development Implications: S. L. HOFFMAN, C. N. OSTER, C. V. PLOWE, G. R. WOOLLETT, J. C. BEIER, J. D. CHULAY, R. A. WIRTZ *et al.*
- 642 Astrocytes Block Axonal Regeneration in Mammals by Activating the Physiological Stop Pathway: F. J. LIUZZI AND R. J. LASEK
- 645 Eosinophils Cocultured with Endothelial Cells Have Increased Survival and Functional Properties: M. E. ROTHENBERG, W. F. OWEN, JR., D. S. SILBERSTEIN, R. J. SOBERMAN, K. F. AUSTEN, R. L. STEVENS
- 648 Concanavalin A Alters Synaptic Specificity Between Cultured *Aplysia* Neurons: S. S. LIN AND I. B. LEVITAN
- 650 Pheromone Components and Active Spaces: What Do Moths Smell and Where Do They Smell It?: C. E. LINN, JR., M. G. CAMPBELL, W. L. ROELOFS
- 652 Evidence for Reduced Recombination on the Nondisjoined Chromosomes 21 in Down Syndrome: A. C. WARREN, A. CHAKRAVARTI, C. WONG, S. A. SLAUGENHAUPT, S. L. HALLORAN, P. C. WATKINS *et al.*
- 655 Developmental Stability of the Tonotopic Organization of the Chick's Basilar Papilla: G. A. MANLEY, J. BRIX, A. KAISER

AAAS News

- 660 AAAS Summer Fellows at Work: L. A. LEVEY AND S. SAUER ■ Abelson Receives National Medal of Science: J. L. TERAMANI ■ More Cost Savings for Insured Members ■ 1987 Science Education Directory Available ■ Seminar Looks at Movement of Scientists and Engineers Between Germany and U.S.: C. V. KIDD ■ Judging Panel Selected for Public Understanding Award ■ Pacific Division Meets in San Diego ■ Obituaries

Book Reviews

- 665 Scientific Colonialism, *reviewed* by D. P. MILLER ■ The Development of American Physiology, P. J. PAULY ■ To Infinity and Beyond, J. CALLAHAN ■ Some Other Books of Interest ■ Books Received

Software Reviews

- 669 Contour Mapping and SURFACE II: J. C. DAVIS

Products & Materials

- 673 Computer System Reads 2-D Gels ■ EM with Variable Voltage, Pressure ■ Chemical-Structure Search Software ■ Polypropylene Filters for Liquid Clarification ■ ELISA Chromophore System ■ Color Electrostatic Plotter ■ Computerized Chemical Templates ■ MEDLINE on Optical Disk ■ Literature

Board of Directors

Lawrence Bogorad
*Retiring President,
Chairman*

Sheila E. Widnall
President

Walter E. Massey
President-elect

Robert McC. Adams
Floyd E. Bloom
Mary E. Clutter
Mildred S. Dresselhaus
Beatrix A. Hamburg
Donald N. Langenberg
Frank von Hippel
Linda S. Wilson

William T. Golden
Treasurer

Alvin W. Trivelpiece
Executive Officer

Editorial Board

Elizabeth E. Bailey
David Baltimore
William F. Brinkman
Philip E. Converse
Joseph L. Goldstein
James D. Idol, Jr.
Leon Knopoff
Seymour Lipset
Oliver E. Nelson
David V. Ragone
David M. Raup
Vera C. Rubin
Larry L. Smarr
Solomon H. Snyder
Robert M. Solow
James D. Watson

Board of Reviewing Editors

John Abelson
Qais Al-Awqati
James P. Allison
Don L. Anderson
Elizabeth H. Blackburn
Floyd E. Bloom
Charles R. Cantor
James H. Clark
Bruce F. Eldridge
Stanley Falkow
Theodore H. Geballe
Roger I. M. Glass
Stephen P. Goff
Robert B. Goldberg

Corey S. Goodman
Stephen J. Gould
Richard M. Held
Gloria Heppner
Eric F. Johnson
Konrad B. Krauskopf
I. Robert Lehman
Karl L. Magleby
Joseph B. Martin
John C. McGiff
Alton Meister
Mortimer Mishkin
Peter Olson
Gordon H. Orians
Carl O. Pabo
John S. Pearce

Yeshayau Pocker
Jean Paul Revel
James E. Rothman
Thomas C. Schelling
Ronald H. Schwartz
Stephen M. Schwartz
Otto T. Solbrig
Robert T. N. Tjian
Virginia Trimble
Geerat J. Vermeij
Martin G. Weigert
Harold Weintraub
Irving L. Weissman
George M. Whitesides
Owen N. Witte
William B. Wood

Science

237 (4815)

Science **237** (4815), 571-673.

ARTICLE TOOLS

<http://science.sciencemag.org/content/237/4815>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.