

1635 This Week in *Science*

## Editorial

1637 The Molecule of the Year

## Molecule of the Year

1640 Diamond: Glittering Prize for Materials Science: R. L. GUYER AND D. E. KOSHLAND, JR.

## Letters

1644 Carcinogens and Human Health: Part 1; F. P. PERERA; B. N. AMES AND L. S. GOLD ■ The Avocado Illusion: P. E. SANDORFF

## News & Comment

1648 Choosing Detectors for the SSC  
1651 Stanford Sails into a Storm  
A Rare View of the Moon  
1652 Biomedical Funding: The Eternal "Crisis" ■ Plus ça Change  
1654 Space Program: A Blueprint for Ambiguity?

## Research News

1655 Slow Going for Blood Substitutes ■ Blood, Money, and the Pentagon  
1657 Immune Mystery Revealed: How MHC Meets Antigen  
1658 Astro-1: From the Jaws of Defeat  
1659 Breast Cancer: Two Steps Closer to Understanding  
1660 Volcanoes: Old, New, and—Perhaps—Yet to Be: A New Wrinkle for the Face of Venus ■ Volcano Watchers Await Long Valley's Signal ■ Surging Plate Tectonics Erupts Beneath the Sea  
1662 *Briefings*: NSF Watch Plays Up Misconduct ■ Natchez Man Gets Younger ■ Gazing Through a Gravitational Lens ■ What Next for the Energy Labs? ■ Brown Ousts Staffer from Committee ■ Ulysses: All Shook Up ■ Pinning Down Sequencing Costs ■ GAO Finds Weapons Labs Vulnerable . . .

## Articles

1665 A Mechanism for Social Selection and Successful Altruism: H. A. SIMON  
1669 Biomass Burning in the Tropics: Impact on Atmospheric Chemistry and Biogeochemical Cycles: P. J. CRUTZEN AND M. O. ANDREAE  
1678 Mechanisms in the Cycle of Violence: K. A. DODGE, J. E. BATES, G. S. PETTIT

## Research Articles

1684 Linkage of Early-Onset Familial Breast Cancer to Chromosome 17q21: J. M. HALL, M. K. LEE, B. NEWMAN, J. E. MORROW, L. A. ANDERSON *et al.*  
1690 Cloning and Expression of a Developmentally Regulated Protein That Induces Mitogenic and Neurite Outgrowth Activity: Y.-S. LI, P. G. MILNER *et al.*  
1694 Targeting the E1 Replication Protein to the Papillomavirus Origin of Replication by Complex Formation with the E2 Transactivator: I. J. MOHR, R. CLARK *et al.*

## Reports

1700 Iridium Profile for 10 Million Years Across the Cretaceous-Tertiary Boundary at Gubbio (Italy); W. ALVAREZ, F. ASARO, A. MONTANARI  
1702 Kinematics of Late Paleozoic Continental Collision Between Laurentia and Gondwana: P. E. SACKS AND D. T. SECOR, JR.  
1705 Control of a Desert-Grassland Transition by a Keystone Rodent Guild: J. H. BROWN AND E. J. HESKE  
1707 Characterization of "Peak E," a Novel Amino Acid Associated with Eosinophilia-Myalgia Syndrome: A. N. MAYENO, F. LIN, C. S. FOOTE *et al.*

■ SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, 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 additional mailing offices. Copyright © 1990 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): \$80. Domestic institutional subscription (51 issues): \$150. Foreign postage extra: Canada \$46, other (surface mail) \$46, air mail via Amsterdam \$85. First class, airmail, school-year, and student rates on request. Change of address: allow 6 weeks, giving old and new addresses and 11-digit account number. Postmaster: Send change of address to Science, P.O. Box 1723, Riverton, NJ 08077. Single copy sales: Current issue, \$3.50; back issues, \$5.00; Biotechnology issue, \$6.00 (for postage and handling, add per copy \$0.50 U.S., \$1.00 all foreign); Guide to Biotechnology Products and Instruments, \$20 (for postage and handling add per copy \$1.00 U.S., \$1.50 Canada, \$2.00 other foreign). Bulk rates on request. 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, 27 Congress Street, Salem, Massachusetts 01970. The identification code for Science is 0036-8075/83 \$1 + .10. 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 objectives 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, to advance education in science, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.



COVER Optical image of a 6.0-micrometer-thick single-crystal diamond film grown by chemical vapor deposition, together with gem-cut natural diamonds. Strain in the crystal causes the various colors in polarized light. Such films may form the basis for new kinds of electronic and optical devices. See Editorial, page 1637, and Molecule of the Year, p. 1640. [Diamond film made by A. Badzian and T. Badzian, micrograph by Barry Scheetz, Pennsylvania State University, University Park, PA 16802; photograph of gem-cut diamonds by Randy Duchaine/The Stock Market]

- 1709 Zinc Mediation of the Binding of Human Growth Hormone to the Human Prolactin Receptor: B. C. CUNNINGHAM, S. BASS, G. FUH, J. A. WELLS
- 1712 Stable, Monomeric Variants of  $\lambda$  Cro Obtained by Insertion of a Designed  $\beta$ -Hairpin Sequence: M. C. MOSSING AND R. T. SAUER
- 1715 Inheritance of Proliferative Breast Disease in Breast Cancer Kindreds: M. H. SKOLNICK, L. A. CANNON-ALBRIGHT, D. E. GOLDFAR *et al.*
- 1720 Induction by Antigen of Intrathymic Apoptosis of CD4<sup>+</sup>CD8<sup>+</sup> TCR<sup>lo</sup> Thymocytes in Vivo: K. M. MURPHY, A. B. HEIMBERGER, D. Y. LOH
- 1723 Transport Protein Genes in the Murine MHC: Possible Implications for Antigen Processing: J. J. MONACO, S. CHO, M. ATTAYA
- 1726 Peripheral Clonal Elimination of Functional T Cells: L. A. JONES, L. T. CHIN, D. L. LONGO, A. M. KRUISBEEK
- 1729 Hemolin: An Insect-Immune Protein Belonging to the Immunoglobulin Superfamily: S.-C. SUN, I. LINDSTRÖM, H. G. BOMAN, I. FAYE, O. SCHMIDT
- 1732 Dominant Negative Regulation of the Mouse  $\alpha$ -Fetoprotein Gene in Adult Liver: J. VACHER AND S. M. TILGHMAN
- 1735 Calcium-Sensitive Inactivation in the Gating of Single Calcium Channels: D. T. YUE, P. H. BACKX, J. P. IMREY
- 1738 A New Arbovirus from *Aedes albopictus*, an Asian Mosquito Established in the United States: D. B. FRANCY, N. KARABATSOS, D. M. WESSON *et al.*
- 1740 Regulation of Progesterone Receptor-Mediated Transcription by Phosphorylation: L. A. DENNER, N. L. WEIGEL, B. L. MAXWELL *et al.*
- 1743 Early Enhancement of Calcium Currents by H-ras Oncoproteins Injected into *Hermisenda* Neurons: C. COLLIN, A. G. PAPAGEORGE, D. R. LOWY *et al.*
- 1745 Hot Spots for Growth Hormone Gene Deletions in Homologous Regions Outside of Alu Repeats: C. L. VNENCAK-JONES AND J. A. PHILLIPS III

## Technical Comments

- 1749 Type 1 Neurofibromatosis Gene: Correction: M. R. WALLACE, D. A. MARCHUK, L. B. ANDERSON, F. S. COLLINS; G. R. SKUSE; M. R. WALLACE *et al.*

## Inside AAAS

- 1750 Forensic Scientists Uncovering Fate of Brazil's "Disappeared" with help of AAAS  
■ Spotlight on Top Scientists in Africa ■ Global Warming: Not Only Show in Town ■ Fellows Sought from Industry for OSTP Posts ■ Interview with Ivan Havel: Science in Eastern Europe

## Book Reviews

- 1754 The High-Status Track, reviewed by D. KAREN ■ The Diverted Dream, H. S. WECHSLER ■ Moments in the Life of a Scientist, M. W. FRIEDLANDER ■ Freedom in Machinery, J. DUFFY AND M. GRIFFIS ■ The Astronomer's Universe, K. BRACHER ■ The Mechanics of Earthquakes and Faulting, R. L. BRUHN ■ Books Received

## Products & Materials

- 1764 Nucleic Acid Cross-Linker ■ Powerful Desktop PC ■ Colorimetric Web for Protein Immunoblotting ■ Monoclonal Antibodies ■ Ribonuclease Protection Assay Kit ■ Chemiluminescent DNA-Typing Kit ■ Literature

*Author Index to Volume 250 is found on pages I-X*  
*Information for Contributors is found on pages XI-XII*

### Board of Directors

Richard C. Atkinson  
*Retiring President,*  
*Chairman*

Donald N. Langenberg  
*President*

Leon M. Lederman  
*President-elect*

Mary Ellen Avery  
Francisco J. Ayala  
Eugene H. Cota-Robles  
Robert A. Frosch  
Joseph G. Gavin, Jr.  
John H. Gibbons  
Beatrice A. Hamburg  
Florence P. Haseltine

William T. Golden  
*Treasurer*

Richard S. Nicholson  
*Executive Officer*

### Editorial Board

Elizabeth E. Bailey  
David Baltimore  
William F. Brinkman  
E. Margaret Burbidge  
Pierre-Gilles de Gennes  
Joseph L. Goldstein  
Mary L. Good  
F. Clark Howell  
James D. Idol, Jr.  
Leon Knopoff  
Oliver E. Nelson  
Yasutomi Nishizuka  
Helen M. Ranney  
David M. Raup  
Howard A. Schneiderman  
Larry L. Smarr  
Robert M. Solow  
James D. Watson

### Board of Reviewing Editors

John Abelson  
Don L. Anderson  
Stephen J. Benkovic  
Gunter K-J Blobel  
Floyd E. Bloom  
Henry R. Bourne  
James J. Bull  
Kathryn Calame  
Charles R. Cantor  
Ralph J. Cicerone  
John M. Coffin  
Robert Dorfman  
Bruce F. Eldridge  
Paul T. Englund  
Fredric S. Fay  
Harry A. Fozzard

Theodore H. Geballe  
Roger I. M. Glass  
Stephen P. Goff  
Corey S. Goodman  
Stephen J. Gould  
Eric F. Johnson  
Stephen M. Kosslyn  
Konrad B. Krauskopf  
Charles S. Levings III  
Richard Losick  
Joseph B. Martin  
John C. McGiff  
Anthony R. Means  
Mortimer Mishkin  
Roger A. Nicoll  
William H. Orme-Johnson III  
Carl O. Pabo  
Yeshayau Pocker

Dennis A. Powers  
Erkki Ruoslahti  
Thomas W. Schoener  
Ronald H. Schwartz  
Terrence J. Sejnowski  
Robert T. N. Tjian  
Virginia Trimble  
Emil R. Unanue  
Geerat J. Vermeij  
Bert Vogelstein  
Harold Weintraub  
Irving L. Weissman  
Zena Werb  
George M. Whitesides  
Owen N. Witte  
William B. Wood  
Keith Yamamoto

# Science

**250 (4988)**

*Science* **250** (4988), 1635-1764.

ARTICLE TOOLS

<http://science.sciencemag.org/content/250/4988>

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.