



**1433**

Antarctic research  
feels the chill

## NEWS & COMMENT

- Are Wildlife Corridors the Right Path? 1428
- Report Strips R&D Down  
to the Basics 1430
- Scientific Misconduct: Panel Urges  
New Approach to Inquiries 1431
- Japan: Consortia to Boost Efforts to  
Develop Genome Industry 1432
- Pressure on Budget Triggers Review  
of Antarctic Program 1433
- Europeans Make Room for  
Ice-Core Project 1434

## RESEARCH NEWS

- Found: A Star Too Small to Shine 1435
- Why Mammal Ears Went on the Move 1436
- Brain Researchers Speak a Common  
Language 1437
- Measurements Are the Only Reality,  
Say Quantum Tests 1439

Model Enzyme Takes Hydrogen Apart 1440

Geoscientists Contemplate a Fatal  
Belch and a Living Ocean 1441

## POLICY FORUMS

- Myths About Test Score Comparisons 1446  
I. C. Rotberg
- Needed: Coherent Budgeting for  
Science and Technology 1448  
F. Press
- How Does the Texaco Case Affect  
Photocopying by Scientists? 1450  
The National Conference of Lawyers and  
Scientists

## PERSPECTIVES

- An Exploding Star in Motion 1452  
R. A. Chevalier
- Molecular Mimicry in Protein  
Synthesis? 1453  
P. B. Moore
- The United Nations Climate Convention: 1454  
Unattainable or Irrelevant  
P. E. Kauppi

## DEPARTMENTS

- |   |  |
|---|--|
| <b>THIS WEEK IN SCIENCE</b> 1415  | <b>RANDOM SAMPLES</b> 1443   |
| <b>EDITORIAL</b> 1417   | Substitute for Shock Therapy? • Biocontrol from<br>Kiwi Mold • Subterranean Rumbling at Mount St.<br>Helens • Tunable Sensors • Virtual Course on Pro-<br>tein Structure • Fuzzy Athletic Vegetarian ISO ... |
| <b>LETTERS</b> 1419   | <b>BOOK REVIEWS</b> 1511   |
| Lyme Disease Research: P. McFadden • Diet and<br>Test Animals: R. W. Hart, A. Turturro, J. Leakey,<br>W. T. Allaben; J. R. Bucher, G. N. Rao, K. Abdo,<br>F. Kari, G. Lucier • Genetic Discrimination: Actua-<br>rial Aspects: A. Dicke; K. Hudson and F. Collins | <i>DNA Repair and Mutagenesis</i> , reviewed by B. S.<br>Strauss • <i>Physics and Chemistry of Earth Materials</i> , R.<br>Jeanloz • Books Received • Vignettes • Publishers'<br>Addresses                   |
| <b>SCIENTESCOPE</b> 1427  | <b>PRODUCTS &amp; MATERIALS</b> 1515   |

## Board of Reviewing Editors

Frederick W. Alt  
Don L. Anderson  
Michael Ashburner  
Stephen J. Benkovic  
Alan Bernstein  
David E. Bloom  
Piet Borst  
Henry R. Bourne  
Michael S. Brown  
James J. Bull  
Kathryn Calame  
C. Thomas Caskey

Dennis W. Choi  
David Clapham  
Adrienne E. Clarke  
John M. Coffin  
F. Fleming Crim  
Paul J. Crutzen  
James E. Dahlberg  
Robert Desimone  
Paul T. Englund  
G. Ertl  
Richard G. Fairbanks  
Douglas T. Fearon

Harry A. Fozzard  
Klaus Friedrich  
Roger I. M. Glass  
Stephen P. Goff  
Peter N. Goodfellow  
Corey S. Goodman  
Peter Gruss  
Philip C. Hanawalt  
Ira Herskowitz  
Nobutaka Hirokawa  
Tomas Hökfelt  
Tasuku Honjo

Susan D. Iversen  
Eric F. Johnson  
Stephen M. Kosslyn  
Michael LaBarbera  
Nicole Le Douarin  
Charles S. Levings III  
Alexander Levitzki  
Harvey F. Lodish  
Richard Losick  
Reinhard Lührmann  
Ruth Lynden-Bell  
Seth Marder

Diane Mathis  
Anthony R. Means  
Shigetada Nakanishi  
Kim Nasmyth  
Roger A. Nicoll  
Staffan Normark  
Stuart L. Pimm  
Yeshayau Pocker  
Dennis A. Powers  
Ralph S. Quatrano  
Martin Raff  
V. Ramanathan

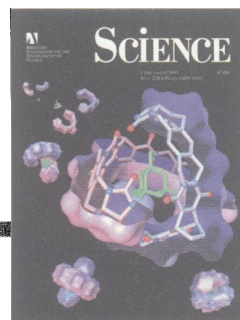
Douglas C. Rees  
T. M. Rice  
David C. Rubie  
Erkki Ruoslahti  
Gottfried Schatz  
Jozef Schell  
Ronald H. Schwartz  
Terrence J. Sejnowski  
Ellen Solomon  
Thomas A. Steitz  
Michael P. Stryker  
Tomoyuki Takahashi

Masatoshi Takeichi  
Keiji Tanaka  
Robert T. N. Tjian  
Yoshinori Tokura  
Emil R. Unanue  
Geerat J. Vermeij  
Bert Vogelstein  
Arthur Weiss  
Zena Werb  
George M. Whitesides  
Owen N. Witte  
William A. Wulf

Downloaded from http://science.sciencemag.org/ on September 19, 2009

Tetramethyladamantane (green) is encapsulated by two molecules of a self-complementary synthetic receptor. An array of weak intermolecular forces are balanced to produce the assembly in solution. (Red

spheres, oxygen atoms; blue spheres, nitrogen atoms.) See page 1485. [Image: Michael Pique, The Scripps Research Institute, on a Sun Workstation with software by Michael Connolly and AVS, Inc.]



## ARTICLES

The Interstellar Carbon Budget and the Role of Carbon in Dust and Large Molecules 1455  
T. P. Snow and A. N. Witt

Venus Reconsidered 1460  
W. M. Kaula

## RESEARCH ARTICLE

Crystal Structure of the Ternary Complex of Phe-tRNA<sup>Phe</sup>, EF-Tu, and a GTP Analog 1464  
P. Nissen, M. Kjeldgaard, S. Thirup, G. Polekhina, L. Reshetnikova, B. F. C. Clark, J. Nyborg

## REPORTS

Phase Diagram of Iron by in Situ X-ray Diffraction: Implications for Earth's Core 1473  
C. S. Yoo, J. Akella, A. J. Campbell, H. K. Mao, R. J. Hemley

Expansion of SN 1993J 1475  
J. M. Marcaide, A. Alberdi, E. Ros, P. Diamond, I. I. Shapiro, J. C. Guirado, D. L. Jones, T. P. Krichbaum, F. Mantovani, R. A. Preston, A. Rius, R. T. Schilizzi, C. Trigilio, A. R. Whitney, A. Witzel

Infrared Spectrum of the Cool Brown Dwarf Gl 229B 1478  
B. R. Oppenheimer, S. R. Kulkarni, K. Matthews, T. Nakajima

Molecular Organization of Surfactants at Solid-Liquid Interfaces 1480  
S. Manne and H. E. Gaub

Scaling Properties of Stretching Ridges in a Crumpled Elastic Sheet 1482  
A. Lobkovsky, S. Gentges, H. Li, D. Morse, T. A. Witten

Autoencapsulation Through Intermolecular Forces: A Synthetic Self-Assembling Spherical Complex 1485  
R. S. Meissner, J. Rebek Jr., J. de Mendoza

Yeast Checkpoint Genes in DNA Damage Processing: Implications for Repair and Arrest 1488  
D. Lydall and T. Weinert

Activation of the Estrogen Receptor Through Phosphorylation by Mitogen-Activated Protein Kinase 1491  
S. Kato, H. Endoh, Y. Masuhiro, T. Kitamoto, S. Uchiyama, H. Sasaki, S. Masushige, Y. Gotoh, E. Nishida, H. Kawashima, D. Metzger, P. Chambon

Solution Structure of the Activator Contact Domain of the RNA Polymerase  $\alpha$  Subunit 1495  
Y. H. Jeon, T. Negishi, M. Shirakawa, T. Yamazaki, N. Fujita, A. Ishihama, Y. Kyogoku

A Population Genetic Test of Selection at the Molecular Level 1497  
M. F. J. Taylor, Y. Shen, M. E. Kreitman

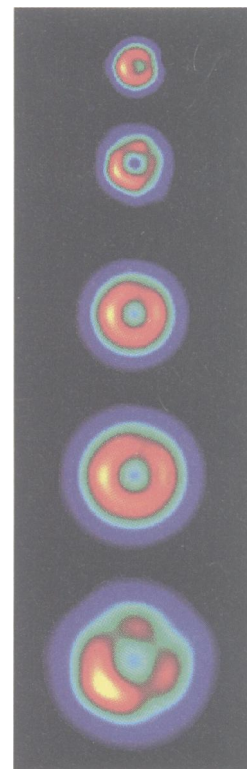
Definition of Two Angiogenic Pathways by Distinct  $\alpha_v$  Integrins 1500  
M. Friedlander, P. C. Brooks, R. W. Shaffer, C. M. Kincaid, J. A. Varner, D. A. Cheresh

Essential Ca<sup>2+</sup>-Binding Motif for Ca<sup>2+</sup>-Sensitive Inactivation of L-Type Ca<sup>2+</sup> Channels 1502  
M. de Leon, Y. Wang, L. Jones, E. Perez-Reyes, X. Wei, T. W. Soong, T. P. Snutch, D. T. Yue

Coactivator and Promoter-Selective Properties of RNA Polymerase I TAFs 1506  
H. Beckmann, J.-L. Chen, T. O'Brien, R. Tjian

## TECHNICAL COMMENTS

The Evolution of Molecular Computation 1510  
W. P. C. Stemmer



1452 & 1475  
Symmetry in an expanding supernova

## AAAS Board of Directors

Francisco J. Ayala  
Retiring President,  
Chairman  
Rita R. Colwell  
President  
Jane Lubchenco  
President-elect

William A. Lester Jr.  
Simon A. Levin  
Michael J. Novacek

Anna C. Roosevelt  
Alan Schriesheim  
Jean E. Taylor  
Chang-Lin Tien  
Nancy S. Wexler

William T. Golden  
Treasurer  
Richard S. Nicholson  
Executive Officer

■ 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 © 1995 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): \$97 (\$50 allocated to subscription). Domestic institutional subscription (51 issues): \$228. Foreign postage extra: Mexico, Caribbean (surface mail) \$53; other countries (air assist delivery) \$93. First class, airmail, student and emeritus rates on request. Canadian rates with GST available upon request, GST #1254 88122. Printed in the U.S.A.

Change of address: allow 4 weeks, giving old and new addresses and 8-digit account number. Postmaster: Send change of address to Science, P.O. Box 1811, Danbury, CT 06813-1811. Single copy sales: \$7.00 per issue prepaid includes surface postage; 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 \$3.00 per article is paid directly to CCC, 27 Congress Street, Salem, MA 01970. The identification code for Science is 0036-8075/95 \$3.00. Science is indexed in the Reader's Guide to Periodical Literature and in several specialized indexes.

# Science

**270 (5241)**

*Science* **270** (5241), 1415-1516.

ARTICLE TOOLS

<http://science.sciencemag.org/content/270/5241>

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. The title *Science* is a registered trademark of AAAS.

Copyright © 1995 The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works.