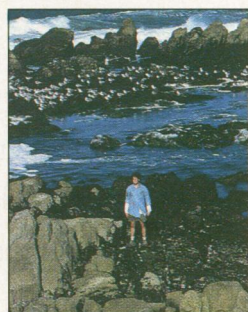
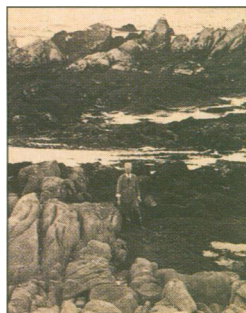


**620**

Biology's new image

**672**

A communal shift to the north



## NEWS

Guarding Against Internet Intruders **608**  
Learning to Live With a Fire Wall **609**

Chechnya War Threatens Science **610**

NAS to Lose Contract for A-Bomb Study **611**

Fishermen Threaten Galápagos **611**

Is the World Warming or Not? **612**

Walker Bill to Boost Hydrogen Sparks **613**  
Democratic Grumbling

Painted Puzzles Line the Walls of an Ancient Cave **614**

NSF: Multidisciplinary Office Spurs Debate **615**

Getting the Poop on Baboon DNA **615**

Brain Center Linked to Perfect Pitch **616**

For a Successful Supernova, Mix Well, Then Explode **617**

## SPECIAL NEWS REPORT

Protein Images Update Natural History **620**  
Now Even Weaklings Can Image Proteins! **620**  
Industrial-Strength Protein Structures **622**

## POLICY FORUM

Reexamining AIDS Research Priorities **633**  
W. E. Paul

## PERSPECTIVE

Explosive Evolution in Tertiary Birds and Mammals **637**  
A. Feduccia

## ARTICLE

Ocean Tides for and from TOPEX/POSEIDON **639**  
C. Le Provost, A. F. Bennett, D. E. Cartwright

## RESEARCH ARTICLE

Aminoacyl-RNA Synthesis Catalyzed by an RNA **643**  
M. Illangasekare, G. Sanchez, T. Nickles, M. Yarus

## REPORTS

Metal Ions in the Atmosphere of Neptune **648**  
J. R. Lyons

## DEPARTMENTS

THIS WEEK IN SCIENCE **597**

EDITORIAL **599**  
SOSS: Save Our Social Security

LETTERS **601**  
*E. coli* Sequencing: J. C. Venter; R. Haselkorn • NSF FastLane Goals: A. C. Petersen • Shelter After Earthquakes: B. Wattenberg • Risk Assessments of Low-Level Exposures: S. J. Smith, A. T. L. Chen, S. P. Caudill, S. F. Wetterhall, L. E. Sever; J. D. Mann • Other Lipopeptides: J. Y. Takemoto, A. Ballio, A. Isogai

SCIENCESCOPE **607**

RANDOM SAMPLES **618**

BOOK REVIEWS **712**  
*Sexual Selection*, reviewed by M. J. Ryan • *Die Kunst of Phonons*, A. A. Maradudin • Vignettes • Other Books of Interest • Books Received

GORDON RESEARCH CONFERENCES **716**

PRODUCTS & MATERIALS **732**

## Board of Reviewing Editors

Frederick W. Alt  
Don L. Anderson  
Michael Ashburner  
Stephen J. Benkovic  
David E. Bloom  
Floyd E. Bloom  
Piet Borst  
Henry R. Bourne  
Michael S. Brown  
James J. Bull

Kathryn Calame  
C. Thomas Caskey  
Dennis W. Choi  
John M. Coffin  
F. Fleming Crim  
Paul J. Crutzen  
James E. Dahlberg  
Robert Desimone  
Bruce F. Eldridge  
Paul T. Englund

Richard G. Fairbanks  
Douglas T. Fearon  
Harry A. Fozzard  
Klaus Friedrich  
Theodore H. Geballe  
John C. Gerhart  
Roger I. M. Glass  
Stephen P. Goff  
Peter N. Goodfellow  
Corey S. Goodman

Ira Herskowitz  
Eric F. Johnson  
Stephen M. Kosslyn  
Michael LaBarbera  
Nicole Le Douarin  
Charles S. Leving III  
Alexander Levitzki  
Harvey F. Lodish  
Richard Losick  
Reinhard Lührmann

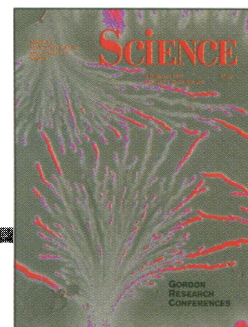
Diane Mathis  
Anthony R. Means  
Shigetada Nakanishi  
Roger A. Nicoll  
Stuart L. Pimm  
Yeshayau Pocker  
Dennis A. Powers  
Ralph S. Quatrano  
V. Ramanathan  
Douglas C. Rees

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

Robert T. N. Tjian  
Emil R. Unanue  
Geerat J. Vermeij  
Bert Vogelstein  
Harold Weintraub  
Arthur Weiss  
Zena Werb  
George M. Whitesides  
Owen N. Witte  
William A. Wulf

Magnetic field intensity map at the surface of a thin-film niobium superconductor after a change in the external field. In the darker (gray) areas the field intensity remained frozen, but the lighter regions (light gray to purple to red) experienced increasing degrees of change. The regions of greatest change, according to

theory, should have been at the edges of the sample (top and bottom). The photo was chosen from submissions from scientists chairing the 1995 Gordon Conferences. For information on this year's Gordon Conferences, see page 716. [Photo: C. A. Duran, P. L. Gammel, R. E. Miller, and D. J. Bishop at AT&T Bell Laboratories]



**Stress-Induced Vortex Line Helixing Avalanches in the Plastic Flow of a Smectic A Liquid Crystal** **651**

R. A. Herke, N. A. Clark, M. A. Handschy

**Imaging with Intermolecular Multiple-Quantum Coherences in Solution Nuclear Magnetic Resonance** **654**

W. Richter, S. Lee, W. S. Warren, Q. He

**Neutron Reflection Study of Bovine  $\beta$ -Casein Adsorbed on OTS Self-Assembled Monolayers** **657**

G. Fragneto, R. K. Thomas, A. R. Rennie, J. Penfold

**Solid-State Defect Mechanism in Vanadyl Pyrophosphate Catalysts: Implications for Selective Oxidation** **661**

P. L. Gai and K. Kourtakis

**Taboo Search: An Approach to the Multiple Minima Problem** **664**

D. Cvijović and J. Klinowski

**Simulation of Recent Global Temperature Trends** **666**

N. E. Graham

**Climate-Related, Long-Term Faunal Changes in a California Rocky Intertidal Community** **672**

J. P. Barry, C. H. Baxter, R. D. Sagarin, S. E. Gilman

**Minor Groove Recognition of the Conserved G-U Pair at the *Tetrahymena* Ribozyme Reaction Site** **675**

S. A. Strobel and T. R. Cech

**Genetic Decreases in Atrial Natriuretic Peptide and Salt-Sensitive Hypertension** **679**

S. W. M. John, J. H. Krege, P. M. Oliver, J. R. Hagaman, J. B. Hodgins, S. C. Pang, T. G. Flynn, O. Smithies

**Independent Human MAP Kinase Signal Transduction Pathways Defined by MEK and MKK Isoforms** **682**

B. Dérijard, J. Raingeaud, T. Barrett, I-H. Wu, J. Han, R. J. Ulevitch, R. J. Davis

**Association Between X-Linked Mixed Deafness and Mutations in the POU Domain Gene *POU3F4*** **685**

Y. J. M. de Kok, S. M. van der Maarel, M. Bitner-Glindzic, I. Huber, A. P. Monaco, S. Malcolm, M. E. Pembrey, H.-H. Ropers, F. P. M. Cremers

**Requirement of MADS Domain Transcription Factor D-MEF2 for Muscle Formation in *Drosophila*** **688**

B. Lilly, B. Zhao, G. Ranganayakulu, B. M. Paterson, R. A. Schulz, E. N. Olson

**The Functional Significance of Arm Movements in Neonates** **693**

A. L. H. van der Meer, F. R. van der Weel, D. N. Lee

**Potential of Transmitter Release by Ciliary Neurotrophic Factor Requires Somatic Signaling** **695**

R. Stoop and M.-m. Poo

**In Vivo Evidence of Structural Brain Asymmetry in Musicians** **699**

G. Schlaug, L. Jäncke, Y. Huang, H. Steinmetz

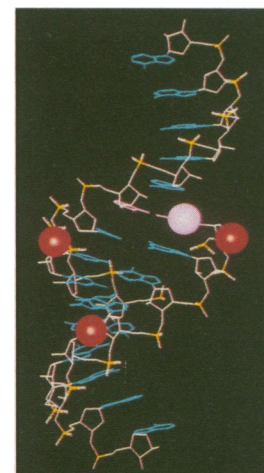
**TECHNICAL COMMENTS**

**Mammalian Vestibular Hair Cell Regeneration** **701**

E. W. Rubel, L. A. Dew, D. W. Roberson; M. E. Warchol and J. T. Corwin; A. Forge, L. Li, G. Nevill

**Regeneration and Mammalian Auditory Hair Cells** **707**

S. Chardin and R. Romand; H. Staecker, P. Lefebvre, B. Malgrange, G. Moonen, T. R. Van De Water



**675**

**Primordial recognition of RNA**

**AAAS Board of Directors**

Loise E. Clark  
Retiring President,  
Chairman  
Francisco J. Ayala  
President  
Rita R. Colwell  
President-elect

William A. Lester Jr.  
Simon A. Levin  
Anna C. Roosevelt

Alan Schriesheim  
Jean'ne M. Shreeve  
Chang-Lin Tien  
Warren M. Washington  
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.**

■ **Indicates accompanying feature**

**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 2033, Marion, OH 43305-2033. **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 the base fee of \$1 per copy plus \$0.10 per page is paid directly to CCC, 27 Congress Street, Salem, MA 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.

# Science

**267 (5198)**

*Science* **267** (5198), 597-732.

**ARTICLE TOOLS**

<http://science.sciencemag.org/content/267/5198>

**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.