NEWS & COMMENT
Genetic Testing Set for Takeoff 464
NIH Grants: Peer Review Reforms Get Good Review 467
Cancer Treatment: Will History Repeat for Boron Capture Therapy? 468
Mikulski Boosts NSF Budget 469
Space Science: A Rejuvenated Companion for Ida? 470

RESEARCH NEWS
The Chemistry of Life at the Margins 471
Mathematicians Get an On-Line Fingerprint File 473
Time-Reversed Sound Waves Resonate Among Physicists 474
E. coli Scare Spawns Therapy Search 475

PERSPECTIVE
Searching for the Quark-Gluon Plasma 480
G. F. Bertsch

ARTICLES
Lunar Laser Ranging: A Continuing Legacy of the Apollo Program 482
Mobile Point Defects and Atomic Basis for Structural Transformations of a Crystal Surface 490
I.-S. Hwang, S. K. Theiss, J. A. Golovchenko

REPORTS
Magmaic Vapor Source for Sulfur 497
Dioxide Released During Volcanic Eruptions: Evidence from Mount Pinatubo 498
P. J. Wallace and T. M. Gerlach
Evidence from Paleosols for the Geological Antiquity of Rain Forest 499
G. J. Retallack and J. German-Heins

DEPARTMENTS
THIS WEEK IN SCIENCE 453
EDITORIAL 455
The Spousal Abuse Problem
LETTERS 457
Biological Diversity and Agriculture: C. R. Margules and K. J. Gaston; K. H. Redford and E. Dinerstein; M. Huston • Omission of References: L. B. McGown and G. Li

SCIENCESCOPE 463
RANDOM SAMPLES 476
Psychology in Crisis? • Professors Have Their Say

PRODUCTS & MATERIALS 554
• Purification in the Time of Cholera • Germans Try Lowering Their Ozone • Speeding the Search for Protein Structure • The Perils of Babies in Batches • Jump in Science and Engineering Immigrants

BOOK REVIEWS 549
The Soul of the American University, reviewed by J. D. Hoeweler Jr. • Dinosaur Eggs and Babies, K. Padian • From Chemical Philosophy to Theoretical Chemistry, D. Barkan • Classification and Cognition, R. Goldstone • Vignettes • Books Received

Board of Reviewing Editors
Frederick W. Alt
Don L. Anderson
Michael Ashburner
Stephen J. Benkovic
David E. Bloom
Floyd H. Bloom
Piet Borst
Henry R. Bourne
Michael S. Brown
James J. Bull
Kathryn Calame
C. Thomas Caskey
Dennis W. Choi
John M. Coffin
Paul J. Crutzen
James E. Dahlberg
Robert Desomone
Bruce F. Elrod
Paul T. Englund
Richard G. Fairbanks
Douglas T. Fearn
Harry A. Fozard
Klaus Friedrich
Theodore H. Geballe
John C. Gerhart
Roger L. Glass
Stephen P. Golff
Peter N. Goodfellow
Corey S. Goodman
Ira Herskowitz
Eric F. Johnson
Stephen M. Koslyn
Michael Ladberbera
Nicole Le Douarin
Charles S. Levingas
Alexander Levitzki
Harvey F. Lodish
Richard Loosick
Diane Mathis
Anthony R. Means
Shigetada Nakasui
Roger A. Nicoll
Stuart L. Prim
Yeshayau Pocker
Dennis A. Powers
Ralph S. Quina
V. Ramanathan
Douglas C. Rees
T. M. Rice
David C. Rubie
Erkki Ruosluhti
Gottfried Schatz
Josef Schell
Ronald H. Schwartz
Terrence J. Sejnowski
Ellen Solomon
Thomas A. Steitz
Michael P. Styrk
Robert T. F. Tjian
Emil R. Unanue
Geerat J. Vermeij
Bert Vogelstein
Harold Weinraub
Arthur Weiss
Zena Werb
George M. Whitesides
Owen N. Witte
William A. Wulf

450  SCIENCE • VOL. 265 • 22 JULY 1994

Downloaded from http://science.sciencemag.org/ on January 5, 2018
Motions of atoms on a germanium surface showing the fundamental excitations from crystalline order that bring about transformations of solids. The interstitial-like (lower left) and vacancy-like (middle right) excitations correspond to those responsible for mass transport, many phase transitions, and catalysis. This atomic-scale view of such dynamic phenomena is made possible by the tunneling microscope. See page 490. [Illustration: Jeff Knight]