

SCIENCE NEWS®

The Weekly Newsmagazine of Science

Science Service Publication
Volume 144, No. 20, November 13, 1993

Alfred Scott McLaren Publisher
Patrick Young Editor
Blair Burns Potter Managing Editor
Janice Rickerich Production/Design Director
Greg W. Pearson Associate Editor
Janet Raloff Senior Editor
Environment/Policy
Ron Cowen Astronomy
Bruce Bower Behavioral Sciences
Richard Lipkin Chemistry/
Materials Science
Richard Monastersky Earth Sciences
Kathy A. Fackelmann,
Elizabeth Pennisi Life Sciences/
Biomedicine
Ivars Peterson Mathematics/Physics
Larry Norland Editorial Assistant
Gabrielle Strobel Science Writer Intern
Cait Anthony Books/Resource Manager
Donald R. Harless Advertising/Business
Manager

SCIENCE NEWS (ISSN 0036-8423) is published weekly on Saturday, except the last week in December, for \$39.50 for 1 year or \$68.00 for 2 years (foreign postage \$6.00 additional per year) by Science Service, Inc., 1719 N Street, N.W., Washington, DC 20036. Second-class postage paid at Washington, DC, and additional mailing office. **POSTMASTER:** Send address changes to SCIENCE NEWS, P.O. Box 1925, Marion, OH 43305. Change of address: Four to six weeks' notice is required — old and new addresses, including zip codes, must be provided.

Copyright © 1993 by Science Service, Inc. Title registered as trademark U.S. and Canadian Patent Offices. Printed in U.S.A.

Editorial and Business Offices:
1719 N St., N.W., Washington, DC 20036
(202-785-2255)

Republication of any portion of SCIENCE NEWS without written permission of the publisher is prohibited.

Subscription Department:
P.O. Box 1925, Marion, OH 43305
For new subscriptions only, call 1-800-247-2160.
For customer service, call 1-800-347-6969.

This Week

- 308 Tracing Earliest Neurons' Migration
- 308 How to get order out of stirring things up
- 309 Digging up cleaner-burning cooking fuels
- 310 Can lipoprotein(a) foretell heart trouble?
- 310 Food cravings tied to brain chemicals
- 311 ACE inhibitor protects diabetics' kidneys
- 311 Questioning a galactic star-forming model

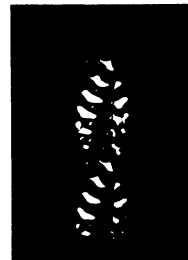
Research Notes

- 319 Behavior
- 319 Physics

Articles

- 314 Firing Up Fuel Cells
- 316 Minimizing Molecular Motor Mysteries

Cover: Microscopic laser techniques and sophisticated structural imaging now enable researchers to peek into the world of molecular movement, revealing much about how certain enzymes can work like a human-made engine. This computer graphic of a helical muscle filament depicts how the constituent proteins fit against each other to make up the complex assembly. (Illustration: Milligan/Michael Whittaker)



Departments

- 307 Letters
- 313 Books

Science Service, which publishes SCIENCE NEWS, is a nonprofit corporation founded in 1921. It gratefully accepts tax-deductible contributions and bequests to assist its efforts to increase the public understanding of science, with special emphasis on young people. More recently, it has included in its mission increasing scientific literacy among members of underrepresented groups. Through its Youth Programs it administers the International Science and Engineering Fair, the Science Talent Search for the Westinghouse Science Scholarships, and publishes and distributes the *Directory of Student Science Training Programs for Precollege Students*.

Board of Trustees — Chairman, Glenn T. Seaborg; **Vice Chairman,** Gerald F. Tape; **Secretary,** David A. Goslin; **Treasurer,** Willis Harlow Shapley; Joseph W. Berg Jr.; Robert W. Fri; J. David Hann; Dudley Herschbach; Shirley M. Malcom; Elena O. Nightingale; Ben Patrusky; Peter H. Raven; H. Guyford Stever; Sanford J. Ungar; Deborah P. Wolfe. **Honorary Trustees —** Edward Bliss Jr.; Bowen C. Dees; O. W. Riegel; John Troan.

President: Alfred Scott McLaren; **Vice President and Business Manager:** Donald R. Harless.

Letters

New light-bending data less precise

The article "Measuring the deflection of light by Earth" (SN: 9/4/93, p.151) states that the Hipparcos measurements of solar relativistic light bending agree with theory to within 0.7 percent, measured "far more precisely than was possible in previous experiments."

Rather than more precise, this result is actually less precise (by about a factor of 3.5) than the current best determination using very long baseline interferometry observations. Of course, this measurement was made at radio wavelengths rather than optical, but the relativistic predictions are independent of wavelength, so that distinction is of no fundamental significance.

Douglas S. Robertson
Geosciences Laboratory
National Oceanic and Atmospheric
Administration
Silver Spring, Md.

How much trash is actually plastic?

In "Waste plastic yields high-quality fuel oil" (SN: 8/28/93, p.134), Mr. Taghiei is quoted as saying, "Plastics today account for roughly 40 percent of landfill trash." He is wrong in his estimate. According to the U.S. Environmental Protection Agency (EPA), that figure is 8.3 percent before recycling. Our own estimate in Delaware is 8.4 percent, and we include in the plastics fraction all bottles, containers of various types, all types of plastic packaging material, and film plastics.

N. C. Vasuki
Chief Executive Officer
Delaware Solid Waste Authority
Dover, Del.

Good catch. However, according to EPA, a 1990 study of municipal solid waste in the United States found plastics making up an estimated 8.3 percent by weight and 21 percent by volume of all solid waste materials generated. — R. Lipkin

New battery: Multiple use or not?

The sulfur-aluminum battery certainly does seem to show great promise, but your article ("Sulfur-aluminum supercharges a new battery," SN: 9/4/93, p.151) does not make clear whether it is a primary (single-use) cell or a secondary (rechargeable) cell. The comparison to alkaline batteries at the beginning of the article implies that it is a single-use cell; the discussion of electric vehicles at the end implies that it is rechargeable.

Do I at last get to look forward to an environmentally sound alternative to gasoline for my car, or must I content myself with a radio that keeps on going, and going, and going?

J. Jackson Callan Jr.
Dunwoody, Ga.

Research and development on the Licht sulfur-aluminum battery has only just begun. But Licht says he sees the battery potentially as a rechargeable type for use in electric vehicles. — R. Lipkin

NOVEMBER 13, 1993

307