

OF THE WEEK

Ice ages and earth orbits	324
Gravitational lens effect affirmed	324
A natural anti-anxiety chemical	325
Aging and dopamine depletion	325
The emotional toll of Three Mile Island	326
Alcohol as heart protector	326
Industrial innovation policy	326
Magnetic field satellite launched	327
NASA to test Gossamer Albatross	327
Malnutrition and emotional deprivation	327

RESEARCH NOTES

Biology	328
Technology	328
Space Sciences	329

ARTICLES

PEP gears up for a collision	330
------------------------------	-----

DEPARTMENTS

Books	322
Letters	323
Off the Beat	334

COVER: The electrons (and the positrons) come down the long straight track, and then they do loop-de-loops at the end. The long straight track is the Stanford Linear Accelerator proper. In its four-kilometer length electrons can gain more than 20 billion electron-volts of energy. At the end is the PEP colliding beam ring, one of the world's two facilities that can store and collide electrons and positrons with energies up to 19 billion electron-volts. It will start experimentation in a short while. See p. 330. (photo: Stanford Univ.)

Publisher E. G. Sherburne Jr.
Editor Robert J. Trotter

Senior Editor and Physical Sciences Dietrick E. Thomsen
Behavioral Sciences Joel Greenberg
Biomedicine Joan Arehart-Treichel
Earth Sciences Susan West
Life Sciences Julie Ann Miller
Policy/Technology Janet Raloff
Space Sciences Jonathan Eberhart
Contributing Editors Lynn Arthur Steen (mathematics)
Kendrick Frazier
John H. Douglas
Michael A. Guillen
Susan Walton

Science Writer Intern Judy Klein
Assistant Editor Dale Appleman
Art Director Angela Musick
Assistant to the Editor Jane M. Livermore
Books Donald Harless
Business Manager Scherago Associates
Advertising 1515 Broadway
New York, N.Y. 10036
Fred W. Dieffenbach,
Sales Director

Copyright © 1979 by Science Service, Inc., 1719 N St., N.W., Washington, D.C. 20036. Republication of any portion of SCIENCE NEWS without written permission of the publisher is prohibited.

Editorial and Business Offices
1719 N Street, N.W.
Washington, D.C. 20036

Subscription Department
231 West Center Street
Marion, Ohio 43302
To subscribe call: (1) 800 — 247-2160

Subscription rate: 1 yr., \$15.50; 2 yrs., \$27.00; 3 yrs., \$37.50 (Add \$3 a year for Canada and Mexico, \$4 for all other countries.) Change of address: Four to six weeks' notice is required. Please state exactly how magazine is to be addressed. Include zip code.

Printed in U.S.A. Second class postage paid at Washington, D.C. Title registered as trademark U.S. and Canadian Patent Offices.

Published every Saturday by SCIENCE SERVICE, Inc. 1719 N St., N.W., Washington, D.C. 20036. (202-785-2255)
ISSN 0036-8423

LETTERS

More mirror reflections

Re: "Reflections on a Ten-Meter Mirror" (SN: 7/28/79, p.76): As an amateur astronomer and precision optician, may I point out that a tessellated mirror 1.8 meters in diameter was installed in the Observatory of the University of Bologna, Italy more than 25 years ago by G. Horn-D'Arturo. I met the late Prof. Horn-D'Arturo at the 1963 Astronomical League convention in Orono, Maine. He later sent me an issue of the Observatory bulletin vol VI #6 containing a paper and photos taken with this telescope.

Off axis paraboloids have been fabricated by professional and amateur opticians for some time, with modern computer controls to maintain the figure of the mirrors — as in the so-called rubber telescopes, it should be feasible to build a 10-meter instrument. Optical designs are known using spherical mirrors and correcting lenses, that might be adaptable. Production methods also exist to fabricate a large number of high-accuracy smaller mirrors. Although no one has ever worked such a large glass, a 33-foot diameter, 6-inch-thick mirror would be extremely difficult to keep from flexing while worked and tested.

Last, to my knowledge, observing technicians have been employed at the Agassiz Station of Harvard Observatory in the past, to assist astronomers and students.

Walter A. Singer
Washington, D. C.,

A low blow

In questioning the efficacy of topical fluoridation (SN: 9/1/79, p.152), you have hit dentistry in the teeth. A preponderance of evidence leads to the opposite conclusion reached in the study reported.

According to HEW, the number of children participating nationwide in fluoride mouthrinse programs has increased from 2 million to 8 million in the last 2 years. A 20 percent to 35 percent reduction in caries can be anticipated. In California schools, a \$1-million, 2-year mouthrinsing program is being underwritten by California Dental Service (CDS), the Delta Dental Plans affiliate in that state. As a result, CDS officials fully expect to see a substantial reduction in the \$1.2 billion that Californians currently pay annually for dental care.

R. Alan Stewart, DDS, FAGD
Wilmington, Del.

SCIENCE NEWS

Are you reading someone else's copy of Science News? Are you at the end of a routing list? Why not get your own — each week?

Please enter my subscription to SCIENCE NEWS for 1 year (52 weekly issues).

Science News Subscription Dept.
231 West Center St.,
Marion, Ohio 43302

Bill me \$15.50 enclosed

Name _____

Address _____

City _____ State _____ Zip _____

Service to start in four to six weeks.

D459-8

Correction: An incomplete copy of a research paper on graffiti (SN: 10/20/79, p. 268) did not include the following, which would have been added to the end of the story: "Neither of these interpretations... may offer realistic appraisals of the emotional states of either men or women... it may be that some women frequently find no means other than graffiti by which they may express their anger, frustration or sexuality. It may be that their male counterparts have other, socially acceptable outlets for these concerns. Or, it may well be that men in our society, due to the still-popular ideal of masculinity, consider no outlet... to be appropriate for their expression."

—Ed.

Address communications to Editor,
Science News, 1719 N Street, N.W.
Washington, D. C. 20036
Please limit letters to 250 words.

SCIENCE SERVICE

Institution for the public understanding of science founded 1921; a nonprofit corporation.

Board of Trustees — *President*, Glenn T. Seaborg, University of California, Berkeley, CA; *Vice President*, Gerald F. Tape, Associated Universities, Washington, DC; *Treasurer*, Milton Harris, Washington, DC; *Secretary*, Julius Duscha, Washington Journalism Center, Washington, DC; *Allen V. Astin*, Bethesda, MD; *Joseph W. Berg Jr.*, National Research Council, Washington, DC; *Edward Bliss Jr.*, Newburyport, MA; *Bowen C. Dees*, The Franklin Institute, Philadelphia, PA; *David A. Goslin*, National Research Council, Washington, DC; *Elizabeth Neufeld*, National Institutes of Health, Bethesda, MD; *O. W. Riegel*, Glasgow, VA; *Aaron Rosenthal*, Washington, DC; *Edward W. Scripps II*, Edward W. Scripps Trust, Carson City, NV; *John Troan*, Pittsburgh Press, Pittsburgh, PA; *Deborah P. Wolfe*, Queens College of City University of New York, Flushing, L.I., NY

Director: E. G. Sherburne Jr.; Assistant Director: Dorothy Schriver; Business Manager: Donald R. Harless; Things of Science: Ruby Yoshioka.