

SCIENCE NEWS®

The Weekly Newsmagazine of Science

Science Service Publication
Volume 143, No. 19, May 8, 1993

Alfred Scott McLaren Publisher
Patrick Young Editor
Laurie Jackson Managing Editor
Vaughan, Blair Burns Potter Editors
Janice Rickerich Production/Design Director
Greg W. Pearson Associate Editor
Janet Raloff Senior Editor
Environment/Policy
Ron Cowen Astronomy
Bruce Bower Behavioral Sciences
Karen F. Schmidt Chemistry/
Materials Science
Richard Monastersky Earth Sciences
Daniel Pendick General Science
Kathy A. Fackelmann, Elizabeth Pennisi Life Sciences/
Biomedicine
Ivars Peterson Mathematics/Physics
Larry Norland Editorial Assistant
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.

Letters

Batter (and letter writers) up!

Bahill, Karnavas, McBeath, and Bootsma, with their studies of rising fastballs and breaking curveballs ("Baseball pitchers hurl illusions home," SN: 2/20/93, p.116), are all out in left field. They seem to think that baseballs do not really curve but fall more or less, depending on how long they are in flight. While the effect of gravity is important in the flight of a baseball, I thought everyone knew that baseballs curved because of Bernoulli's principle. Because of its rotation, a thrown baseball is subject to a very real force other than gravity. All baseball players know this, even if they do not understand the physics.

Perhaps what is at issue is the apparent abruptness of the curve. If so, this easily can be explained if one considers three things: The batter's line of sight is roughly straight into the path of the approaching baseball, so any deviation from a purely gravitational path will seem to be exaggerated. The pitch is in flight for less than one-half second, so it is difficult to

This Week

- 292 Cancer Team Targets Colorectal Gene
- 292 Defying predictions, El Niño still simmers
- 293 Peering into Orion nebula's stellar nursery
- 293 New superconductor record
- 294 New method may speed gene searches
- 294 Exxon's *Valdez* studies ignite controversy
- 295 Close-up views of cells
- 295 Collapsing clusters lead to fullerenes

Research Notes

- 300 Biology
- 302 Biomedicine
- 302 Environment
- 303 Science & Society

Articles

- 296 Looking for Lumps

Cover: Researchers prepare to launch a balloon-borne instrument, the Microwave Anisotropy Experiment, at Fort Sumner, N.M. The instrument searches for tiny fluctuations in the microwave background — radiation left over from the birth of the universe. (Photo courtesy Andrew Lange, Phil Lubin, et al.)



Departments

- 290 Books
- 291 Letters

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.

characterize any movement as "gradual." Because of inertia, aerodynamic forces are not immediately noticeable, but once movement is large enough to be noticed, the pitch seems to "break."

Mark A. Maharg
Atlanta, Ga.

Your article has finally shown me why I have never been able to cure that magnificent slice that I "imagine" each time I use the driver off the tee! To think, all those hours hacking out of the deep rough were mere illusions. No wonder the game of golf seems so fantastic.

I assume that Bahill and Karnavas would also contend that all defensemen "momentarily shift" their gazes as the pitched ball moves away from them and all share the illusory experience occurring at the plate. Imagine the frustration of the poor catcher, who demonstrates such skill in catching the curveball and rising fastball, yet when at bat suddenly loses the ability to concentrate and falls prey to the illusion!

McBeath's contention that a rising fastball would have to defy gravity supports my great-grandmother's claim that *nothing* the size of a 747 could possibly fly.

John A. Thorpe
Gainesville, Ga.

A flat-out error

I could not believe it. SCIENCE NEWS commits one of my pet peeves. It is hard enough to convince the lay person that a male has a *prostate*, not a *prostrate*, and now a scientific publication adds to the confusion (SN: 2/20/93, p.115).

Twenty lashes with a wet noodle as you lie "prostate"!

Ellen J. Menara
Nutley, N.J.

Several eagle-eyed readers caught the typographical error on the contents page. Since it wasn't repeated elsewhere, we're hoping it didn't ensnare the unwary.

— The editors

MAY 8, 1993

291