

This Week

- 68 Starlight Shows Life the Right Path
Ron Cowen
- 68 Lung cancer radiation uses questioned
Nathan Seppa
- 69 How a middling quake made a giant tsunami
Richard Monastersky
- 69 Ring around the virus: RNA packs in the DNA
John Travis
- 70 Glow-in-the-dark shark has killer smudge
Susan Milius
- 70 Illuminating 3-D chaotic mixing in liquids
Ivars Peterson
- 71 Two types of tundra affect carbon balance
Jeffrey Brainard
- 71 Local temperatures dance to global beat
Peter Weiss

Articles

- 72 Giving Neandertals Their Due
Similarities with modern humans shift the image of the caveman brute
Jeffrey Brainard

Letters

Craters off target

In "Target Earth" (SN: 5/16/98, p. 312), the three craters were determined to be parallel to the Earth's equator and therefore deemed to have been parts of a single astrophysical event. However, if they indeed were part of a single event, wouldn't their craters have been aligned 23.5° from the Earth's equator, in the plane of the ecliptic [Earth's orbit], the most likely source of such asteroids?

*Elliot H. Pearl
Brainardville, N.Y.*

No. The orientation of this sort of crater chain should be parallel to Earth's equator at the time and not parallel to the plane of the ecliptic. Think of shooting a fixed gun at a globe. If the globe is stationary, all the shots will hit the same point. If the globe is spinning, the shots will hit at various points on a line parallel to the equator. It doesn't matter whether the gun is aimed horizontally or tilted at an angle of 23.5°, a situation analogous to an asteroid or comet originating in the plane of the ecliptic.
—R. Monastersky

Who says the comet or asteroid has to first be in Earth's orbit (or be fragmented by a close pass of planet Earth) in order to form a crater chain on Earth? An alternative scenario would be the following: An object from deep space passes near Jupiter, becomes fragmented by Jupiter's gravitational field gradient, and is deflected towards Earth. This is certainly possible for a weakly constructed object originating in the Kuiper belt.

Naturally, the probability of such an interaction would be low. But my intuition is that a gravitational deflection of an object's orbit is more likely than a gravitational capture of the object. Plus, with the 4.5 billion year history of our solar system, even a low probability event becomes possible.

*Bob Brazzle
University City School
University City, Mo.*

An object could get fragmented on a pass by Jupiter, but the pieces would drift too far apart by the time they reached Earth or another planet, says William Botke of Cornell University. "By the time they get close enough to hitting a planet, they're so far dispersed that they

don't create a crater chain." Although one of the fragments may hit, the other ones would be so far ahead or behind that they would completely miss Earth.
—R. Monastersky

What type of spray?

Dubbing the new microbe-containing spray Preempt a drug ("Spray Guards Chicks from Infections," SN: 3/28/98, p. 196) is misleading and underestimates the power of such microecologic antibiotic approaches. Indeed, such apparently novel approaches were employed by Eli Metchnikoff and others in the 1890s. This patriarch of bacteriology employed lactobacillus as a treatment to "crowd out" virulent bacteria in the preantibiotic era. Many bacteria have already become resistant to antibiotics. As we approach our own *fin de siècle*, we may be using products such as Preempt more and more frequently. Such products should better be called "probiotics," rather than "antibiotics."

*James A. McGregor
Professor of Obstetrics and Gynecology
Denver Health Medical Center
University of Colorado School of Medicine
Denver, Colo.*

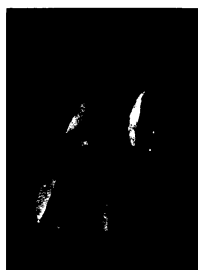
- 75 The Bacteria in the Stone
Extra-tiny microorganisms may lead to kidney stones and other diseases
John Travis

Research Notes

- 74 Biology
Cloned mice make long-awaited debut
Frozen in time: Cells' clocks tick on
- 77 Computers
Quick cracking of secret code
Computers in the house
- 79 Biomedicine
Researchers solve syphilis genome
Asthma drug's effect fades over time
- 79 Materials Science
Smart threads act sensitively when hit
Vacuuming metals into molds
Burger boxes as starchy as the bun

Departments

- 66 Science News Books
- 67 Letters



Cover: Neandertals may have used stone points, like these found in the Near East, as spear tips. Some Neandertals may have hunted regularly and invented a distinct style of jewelry. **Page 72** (John J. Shea, State University of New York at Stony Brook)

Visit SCIENCE NEWS ONLINE for special features, columns, and references.

<http://www.sciencenews.org>