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This Week

20 Monkeys Defy Crowding-Aggression Link
20 Fine-tuning gene action in engineered mice
21 Setting odds on extremity defects after CVS
21 Detecting helium in the early universe
22 Heavy lead found in some French red wine
22 Greenery filters PAH-lution from skies
22 CO_2 increase boosts methane emissions
23 Future for artificial photosynthesis shines
23 Gene patterns decorate butterflies' wings

Research Notes

30 Biomedicine
30 Science & Society

Articles

24 Growing Up Poor
26 The 200,000-Megaton Meeting



Cover: For 6 days beginning July 16, fragment of Comet Shoemaker-Levy 9 will plow one by one into Jupiter. This artist's rendering shows the comet string as viewed from beneath Jupiter's south pole. Virtually every major telescope on Earth and several in space will be trained on Jupiter during the event.
(Drawing: David A. Seal/Jet Propulsion Laboratory)

Departments

18 Books
19 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.*

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Letters

Improving acupuncture studies

Why is it that no one ever uses a control group when studying the results of acupuncture ("Acupuncture gives knees a lift," SN: 5/14/94, p.319)?

I believe it would be instructive to have two groups of acupuncture patients, one treated with the needles in the correct locations for a particular problem and one treated with needles in the wrong locations. It might be a better way of controlling for the placebo effect of the needles.

Steven M. Denenberg
Omaha, Neb.

From the realm of ideal solutions

Your article "Opening a Quantum Door on Computing" (SN: 5/14/94, p.308), in which it is suggested that a "quantum computer" could factor 100-digit numbers by simultaneously considering all smaller numbers as possible factors, brings to mind two other ideal solutions to problems.

Hilbert's Hotel, in which there is a room for each positive integer (1,2,3 . . .), can solve the overbooking problem even if every room is full. Just send a new arrival to room 1, tell the person there to move to room 2, tell the person there to move to room 3. . . .

The recipe for lion and rabbit stew: Take a lion. . . .

Is the quantum computer any closer to reality?

Mark Finkelstein
Associate Professor of Mathematics
University of California
Irvine, Calif.

Enlightening points

As a geologist who uses polarized-light microscopy in both teaching and research, I would like to clarify two points ("Images of Inner Space," SN: 5/21/94, p.328).

First, although many optical microscopists use microscopes without polarizers, the *standard* petrographic microscope used by geologists to investigate thin sections of rock has a pair of polarizers. Thus, we are privy on a routine basis to extraordinarily colored images like those shown in your article.

Second, even if a material is irradiated with light that is *not* polarized, the material may act as a prism. It is not the prism (diffraction) effect that gives rise to the colors seen under the microscope when its polarizers are crossed, but an interference effect. This effect arises in materials that have different optical properties, including how rapidly they propagate light, in different directions.

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