

THIS WEEK

Perplexing X-ray object	372
Remote control astronomy	372
Straus answers ethics commission	373
Zebra fish cloning	373
Hearings study NCI mismanagement	373
Endangered Endangered Species Act	374
Space age pain relief	374
Auroral poetry	375

RESEARCH NOTES

Chemistry	376
Earth Sciences	376
Biology	377
Space Sciences	377

ARTICLES

Dream theory: A physiological model	378
Birth of a solar gas laser	381

DEPARTMENTS

Letters	371
Books	382

COVER: Dreams, are they the symbolic expression of unconscious fantasies, as Freud suggested, or are they the result of random firings of particular neurons, as some brain researchers suggest? These questions were debated at the recent meeting of the American Psychiatric Association. See story p. 378. (*The Great Red Dragon and the Woman Clothed with the Sun* by William Blake courtesy of National Gallery of Art, Washington, D.C., Rosenwald Collection)

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LETTERS

Hidden danger

Food chemist Robert Ory needs to think again before adding flavorless peanut flour to such foods as grapefruit juice, pancakes and hot dogs (SN: 4/11/81, p. 232). Peanuts are an extremely potent allergen.

Our 20-year-old son has several times been rushed to the hospital in anaphylactic shock after unknowingly eating minute amounts of peanut in cake or cookies. He reads labels carefully, and now avoids all commercial baked goods. But what protection would he have in a restaurant or a private home, if such innocent-seeming foods as juice and meat contained a tasteless substance that threatened his life?

Carol H. Sours
Sauquoit, N.Y.

More EMP replies

In your article "EMP Defensive Strategies" (SN: 5/16/81, p. 314), Mr. King states that the Faraday cage approach (overall shielding) appears to be the soundest and cheapest way to protect (harden) against EMP over the life-cycle of a system. However, your article, while very well written, did not address an important design factor which gives the tailored approach (selective protection) a big advantage in effectiveness: Hardening maintenance/surveillance. Degradations of shielding type EMP protection are not only very hard to detect, relatively small flaws can cause catastrophic failures of the EMP protection system. While techniques to detect failures of selective protection are not yet fully developed, because selective protection usually depends heavily on devices such as zener diodes, capacitors and surge arrestors, the test techniques are more straightforward. Also, since selective protection is used to harden individual units or subsystems, the impact of single failures is usually very localized.

While the Faraday cage approach, if properly installed, can provide more effective EMP protection than the selective protection initially, it is not clear that this advantage lasts very long. When this fact is combined with the enormous disparity in the initial cost of the two approaches ("almost an order of magnitude"), it is not surprising that selective protection is favored by many in the EMP community.

G. Krantweiss
Group Leader
Survivability/Vulnerability
The Mitre Corp.
Bedford, Mass.

Your article, while being very informative, brought to mind a personal experience when I was a graduate medical student in Germany in the summer of 1937.

My fiancée and I were motoring in my 1932 Chevrolet coupe with rumble seat in Gatow, a

suburb of Berlin. After turning a bend of the road, we noticed a group of cars parked in opposite directions on both sides of the highway with the hoods up and the drivers probing around their motors and ignition systems. Some thirty to forty cars were involved. As I approached them, and without any warning, my car mysteriously came to a dead stop and I too began probing, with no success, as to the cause of the stoppage. Only about after one hour or so were we all able, within a few moments, to restart our cars. I might mention that the synthetic BV Aral and Shell gasoline were in common unrated use then at 45 Pf./liter (\$1 = 4.20 R.M.).

It was later rumored that a special ray was being tested in the vicinity and it proved, according to the rumor, that it was self-defeating in that it could not be directed since its propagation was circular.

I would be very much interested in your comments.

Constantine D. J. Generales
New York, N.Y.

May I congratulate Janet Raloff for discovering our secret? Thanks to "EMP" and the electronics revolution, we have successfully completed our "doomsday machine." With corporate records stored in the magnetic domain and data processing dependent on frail diodes and unrepairable integrated circuits, any exchange of nuclear weapons will lead to an instant return to Bronze Age communications and erasure of the technological memory of the Nuclear Age.

Chester E. Gleit
Raleigh, N.C.

Balloon inquiry

Reference Susan West's article on ballooning (SN: 4/11/81, p. 237):

Why not an on-board compressor with a zero-pressure balloon? Helium could then be stored during the day and released at night, instead of the present practice of releasing helium in the daytime and throwing over ballast at night. Range would then be limited by the amount of fuel required to run the compressor. Since the compressor would be used mostly during the day it could be at least partially solar powered.

Charles G. Markham
Avila Beach, Calif.

(Lally says: The conversion of helium gas back to liquid to reduce daytime lift requires too much energy for a practical system. For a typical ballooning system, 50 kilograms [400 liters] of helium would have to be liquefied in a one-hour period each morning. Richard Strobbridge of the National Bureau of Standards indicates that 94 kilowatts would be required for a one-hour period in a 100 percent efficient conversion from gas at standard temperature and pressure to liquid. With a realistic efficiency of 20 percent, the power requirement is approximately 500 kilowatts—a 5,000-square-meter solar panel.—Ed.)

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