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Letters

Night light

Your article on light therapy to reset the biological clock for people with SAD ("Here Comes the Sun," SN: 7/25/92, p.62) may suggest a cure for my 10-year bout with insomnia: Don't use my computer late at night. Thinking back, it was about the time I began using a PC in the evening that my sleep problems seemed to increase. If light therapy works to avoid SAD, then "inadvertent light therapy" (exposure to computer monitors at all hours of the day and/or night) may explain certain nonseasonal sleep disorders.

L. R. Kipp
Lawrence, Kan.

Vanishing gammas

Ron Cowen's article, "Energetic gammas from beyond the galaxy" (SN: 8/8/92, p.85), discusses the first-time discovery of trillion-electron-volt gamma rays from a deep-space object. He makes two statements that I do not understand. The first is that "Because gamma

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Cover: Botanist Douglas W. Larson of the University of Guelph examines an ancient eastern white cedar, part of the unusual ecosystem found on southern Ontario's Niagara Escarpment. (Photo: Peter E. Kelly, Univ. of Guelph, Ontario)



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Science Service, a nonprofit corporation founded in 1921, 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 Program 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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rays can't survive in Earth's atmosphere, only satellites such as the GRO can detect them directly." The second is that "... such radiation is easily absorbed by the fog of infrared starlight in the intergalactic medium."

Since trillion-electron-volt gamma rays can penetrate many inches of solid lead, I see no reason why they cannot survive in the atmosphere. Indeed, we can detect their much less energetic brothers on the surface of the Earth all the time. As for the much more tenuous "infrared radiation," it would take a lot of that to stop a trillion-electron-volt gamma.

Could you explain more fully?

William G. Nabor
Senior Health Physicist
University of California, Irvine
Irvine, Calif.

Earth's atmosphere is equivalent to about 3 feet of lead, according to Trevor C. Weekes, who led the recent observations. High-energy gamma rays interact with nuclei, self-destructing and producing pairs of electrons and positrons — among other particles — in their stead.

High-energy gamma rays that encounter infrared photons in the intergalactic medium form pairs of electrons and positrons. In the process, both the gamma rays and infrared photons vanish.

— R. Cowen

Emit vs. reflect

Ron Cowen's otherwise excellent article, "A Universe of Color" (SN: 8/8/92, p.88), contains an error. Maxwell's tartan did not "... emit as much ultraviolet light as red"; it *reflected* as much UV light as red.

K. A. Boriskin
Bellingham, Mass.

Plural peccadillo

I noticed a very small error in your report on polar bear diets ("Bear evidence of omega-3's benefits," SN: 8/22/92, p.127), something so obscure it's hard to check. The word "Inuit" is a plural form. The singular is "Inuk." The word "Inuits," like "oxens," is a double plural.

Barry Lopez
Finn Rock, Ore.

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