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COVER: Starkly illuminated in the Florida night by the lights of Kennedy Space Center's launchpad 39A, the first orbit-bound space shuttle awaits liftoff. See p. 186. (Photo: NASA)

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Marrow transplant dilemma

The news brief on bone marrow transplants (SN: 1/3/81, p. 5) correctly indicates the ethical dilemma posed by the development of infection or graft vs. host rejection, but it omits mentioning an even more important question of ethics in relation to the transplants. In a very small number of leukemia patients who receive marrow transplants, the transplant "takes" and the patient recovers and remains free from leukemia for some time (perhaps months)—then leukemia unexpectedly develops in the transplanted marrow! There are three possible reasons for this: the original (diseased) marrow was not completely destroyed before the new marrow was transplanted; some unknown factor outside the marrow activates leukemia in the new marrow; or the transplanted marrow was "pre-leukemic" and became leukemic when placed in the right environment.

Because of the way the diseased marrow is destroyed prior to a transplant, the first possibility is considered unlikely. At present, science cannot verify or disprove either of the other two possibilities. As long as the third possibility exists, and until a method is found for determining in advance if a person will develop leukemia, the physician is confronted with the terrible choice of not transplanting at all (which effectively denies all hope to some seriously ill patients) or of transplanting a marrow which may itself later turn leukemic and threaten the patient's life.

For many patients, marrow transplants are the only chance they have to remain alive. The transplants are the best therapy because they are the *only* therapy for those leukemias which resist all known drugs. Thus marrow transplantation will have to continue even though the ethical questions are not answered. Answers to the ethical questions will fall out naturally as science learns more about infections, grafts and hosts, and about leukemia itself.

Clarence H. Annett
Kansas City, Kan.

Universe of many sizes

Hurriedly laying down the mail as I entered the house, I quickly glanced at the cover of the Jan. 31 issue of SCIENCE NEWS. "Another type of sky map," I thought.

As I bent to pick it up (sans glasses) I realized that never before had I seen such an area of sky so densely packed with globular clusters and nebulae.

Closer scrutiny (with glasses) revealed not a star chart, but a photograph of a "Nerve Cell in Action."

Universes do come in all sizes.

Joyce London
Bayside, N.Y.

Photon mass

I am happy that SCIENCE NEWS reported the recent work by Marc (not Mark) Sher and myself, suggesting that gauge symmetries may be broken as the temperature is lowered—and in particular that the photon might have a mass below some unknown (but perhaps experimentally accessible) critical temperature (SN: 1/3/81, p. 5). I am pleasantly surprised at how many of my scientific colleagues and students, as well as journalists, read your article and contacted us.

I have only one small request: Could you perhaps note in a forthcoming issue that our work was published in the 18/25 December 1980 NATURE? In that same issue there is a "News and Views" piece by the University of Sussex physicist Norman Dombey which both provides a nice description of the theoretical background of our work, and also announces that Clark and collaborators at Sussex are doing an experiment proposed in our paper to detect a photon mass as small as $10^{-9}eV/c^2$ down to a temperature of 0.05 K.

Joel Primack
Santa Cruz, Calif.

Erroneous assumption?

I'm writing to call attention to an assumption that was made in an article on Carter's last budget (SN: 1/24/81, p. 52).

The article stated: "Scientific and technological development play a major role in maintaining economic productivity and national security. . . ." Not everyone assumes this to be true. Most of the people I know feel *less* secure with the MX and Trident missiles because they are so incredibly lethal to the earth. Scientific and technological research may give us a false sense of national security because then we can feel we're tougher than the Russians. But here we are, sitting on our approximately 30,000 nuclear warheads, growing larger daily; and there they are sitting on their approximately 20,000 nuclear warheads, growing larger daily, and we feel *secure*?

My point doesn't alter the basic point of your article, since there are still a lot of people who equate military development with national security. But I don't, and I feel strongly that we must begin questioning that basic assumption. I think there's more national security to be gained by increasing cultural, scientific and economic ties with the Russian people.

Susan T. Miller
Norwich, Vt.

(Explicandum: The legend "Auroral Antenna Display" on the cover of SN: 2/21/81 seems to have suggested to some readers that we think the Very Large Array interferometer is an instrument for study of atmospheric aurora. We know it is not. "Auroral" here was intended in two senses: The picture was taken at about dawn, and the VLA stands at the dawn of its kind of interferometry. Aurora borealis and aurora australis have nothing to do with it. —Ed.)

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