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Letters

Quantum leap

The correspondence (Letters, SN: 8/31/85, p. 142) on "The Quantum Universe" (SN: 8/3/85, p. 72) shows how far from the rich texture of our mother tongue the technicians and the mathematicians can take us. I believe only Fred Hoyle and his followers have been able to conceive of a steady state for the "eterniverse."

If our mathematicians had more insight into the workings of their own psyches they would, perhaps, consider that, while we are finite and are born and die, we need not project this realization onto the energy of the "infiniverse."

How many "big bangs" have occurred before this one that they are exerting so much energy upon? How many universes exist beyond ours? Why try to count? Just because we can mathematically confine infinity to an unfinished eight

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218 The Earth's Magnetic Hiccup

Cover: The earth's magnetic field has long been known to drift across the face of the planet. But at least once this century this drift was abruptly upset. The rapid change in the field, dubbed the magnetic jerk, may help scientists understand the earth's best kept secret: the flow patterns of the liquid core. (Earth photo: NASA; graph adapted from Courtillot and Le Mouél/NATURE)



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on its side (α) doesn't mean that we have brought infinity or eternity to heel.

In our frantic efforts to avoid facing the incineration of this frail and lovely planet we are losing the wisdom of the human heart.

*Herbert I. Harris
Cambridge, Mass.*

Thomas F. White's letter regarding "The Quantum Universe" seems in error. He can state with a high degree of precision where the auto is when it is between the two gates because it is an automobile, not an electron. Heisenberg's Uncertainty Principle becomes important only at the magnitude of Planck's Constant. The individual photon, which will disturb the electron's position when a measurement is made of its momentum, will disturb the automobile to no significant degree at all. If his probe were a cannonball, there would be a significant disturbance, and position and momentum would be

impossible to determine simultaneously.

If White wanted to use electromagnetic radiation in the radio region, where the wavelength is approximately equal to carlength, he would have difficulty determining position. But with shorter waves, such as the radar waves used by traffic police (wavelength = 10 cm), both position and momentum can be all too easily determined.

*Richard Robinson
Boston, Mass.*

"... [P]aint a white stripe on the road and, at a measured distance away, paint another stripe," writes Thomas F. White. If Mr. White's view, that an automobile moving through two such "gates" is neither there (no location) nor moving (no speed), has attracted a following, we pedestrians are in grave trouble.

*Cyril O. Burke III
New York, N.Y.*

OCTOBER 5, 1985

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