

## OF THE WEEK

sudden outburst from cygnus x-3	164
blast changes magnetic field	164
psychologists under the sun	165
assessing technology assessors	166
ddt and human health	167
soviet leukemia virus?	167
predicting chemical properties	168

## NOTES

earth sciences	170
physical sciences	170
chemistry	171

## ARTICLES

man in weightlessness	172
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## DEPARTMENTS

letters	163
books	175

**Cover:** Soviet and U.S. scientists have seen no irreversible effects of weightlessness on man. But their studies show that man does pay a psychological price for adapting to zero-g. A test now in progress at the Manned Spacecraft Center and next year's Skylab flights will yield more insight. See p. 172 (Cover art: E. Cherry Doyle)

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# to the editor

## An international agency

We enjoyed reading Everly Driscoll's article, "ERTS and international relations" (SN: 8/5/72, p. 90). For several years we have been interested in the international attitude toward earth oriented satellites.

In anticipation of such international concern and objections as reported by Driscoll and others, we formulated a model of an international agency to deal with the political aspects of earth observing satellites (An International Agency for Earth Resources Experiments—IAFEREX, by George A. Coddling and Mohammed Beheshti, Bureau of Governmental Research, University of Colorado, 1972.)

We agree with Driscoll's conclusions that "It will take global models to which ERTS data contribute significantly, . . ." and that "It will take global cooperation to prevent planeticide." We believe an international agency such as IAFEREX can serve as an effective instrument in bringing about "long-range goals to ensure the quality of tomorrow."

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## Physics' malaise

This is in reference to the excellent report on the NAS survey of physics (SN: 8/12/72, p. 101). I agree that physics is just now in an exciting stage but do not agree that its health is too robust.

Relativity, quantum mechanics and metaphysical mathematics being sacrosanct obscure the fact that American physics is being increasingly hamstringed by what T. S. Kuhn (*Structure of Scientific Revolutions*) calls "malaise of crisis": The inability to recognize the fundamental importance of basic developments in experimental physics. New data pose a direct threat to most pre-1930 paradigms. Two recent examples follow.

Studies of circumnavigating cesium 133 (SN: 8/5/72, p. 88) are landmark in character, not because these findings confirm special relativity but because these data indicate that the disintegration con-

stant of radioactivity is indeed an equilibrium constant. That is, that "half-life" can no longer be considered a fixed property. To confirm relativity by the results of Hafele and Keating requires that the earth's galactic motion of 160 km/sec be ignored.

The data of Backenstoss et al (PHYSICS LETTERS, 36B 403, 1971) indicate that the rest mass of the uncharged muon neutrino has an upper limit of 0.6 MeV. Inasmuch as the electron is 0.511 MeV the uncharged muon neutrino appears to be the counterpart of a stable uncharged electron ( $e^0$ ). If this be confirmed, it means that the  $e^0$  will do to nuclear theory what the discovery of the neutron did in 1932. The neutrino sea appears to be the common denominator of particle physics. (Dudley, BULLETIN OF THE AMERICAN PHYSICAL SOCIETY 9, 738, 1964).

Physics "The Closed Society" is well described by R. W. Brehme (AMERICAN JOURNAL OF PHYSICS 40, 1185, 1972). "In an age when fundamental concepts of physics seem so firmly established that no maverick view is likely to alter them, the time when the very foundations of our discipline were being undermined by new theories seems remote. But such was the state of affairs . . . from 1880 to 1930."

I suggest that if physics would recapture the support of those who control research funding, it should come out of the ethereal world of mathematics, returning to Newtonian principles.

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## Environmental chemicals

Your report on the relationship of hypertension to nitrate intake (SN: 7/15/72, p. 43) was very interesting but not too surprising in view of recent reports that another oxidizing agent in water, i.e. hypochlorite from the reaction of water with chlorine, could also affect human blood chemistry.

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163