

The Weekly Newsmagazine of Science

SCIENCE NEWS

August 12, 2000
Vol. 158, No. 7
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Icy Math



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It's the humility that gets you

In the article "Gravity gets measured to greater certainty" (SN: 5/13/00, p. 311), shouldn't "meteorologist" be "metrologist"? The first studies weather, the second, weights and measures.

*Marian Peleski
Newark, Del.*

You don't need a weatherman to know which way to measure gravity. You do, indeed, need a metrologist, even though our computer's spell checker doesn't think so. —The editors

Newton derived theories about gravity by studying stationary or very slowly moving objects. Laboratory measures of *G* performed since share this fundamental approach. While this may accurately measure *G*, any possible relative velocity dependence to this constant or to the force of gravity goes undetected. Determining that force involves only the masses, the separation, and *G*, representing a static gravitational acceleration.

Most cases of interest involve objects in

motion, including confirmations of general relativity in high-velocity binary pairs and around possible black holes. Laboratory research involving masses with high relative velocities, though strongly needed, is absent from the literature.

*Curt Renshaw
Alpharetta, Ga.*

*Major obstacles prevent scientists from measuring *G* in the laboratory using objects moving at near-light speed. In the case of subatomic particles at such relativistic speeds, Heisenberg's uncertainty principle and other problems bar measuring the particles' positions accurately enough, says Douglas S. Robertson of the National Geodetic Survey in Boulder, Colo. Accelerating larger objects to such speeds requires prohibitive amounts of energy and raises safety concerns, he says. Such objects "would attain nuclear-weapon-scale kinetic energies," he notes.* —P. Weiss

Life goes on

Regarding "Another chromosome down, more to go" (SN: 5/13/00, p. 311), I feel the

need to comment on the misconception that trisomies of other than chromosome 21 don't survive birth. I have a friend whose daughter is a trisomy 18 and just celebrated her 19th birthday and other friends whose children with trisomies are nearing their teenage years. My own son, a trisomy 13, lived for 5 days. I suggest researchers and interested readers contact the Support Organization for Families of Trisomies.

*Jean M. Boehm
Bergen, N.Y.*

Don't swallow all the red snow

Although we seldom have the deep and persistent snowfields needed to support watermelon snow in the spring ("Red snow, green snow," SN: 5/20/00, p. 328), I did note it a couple of springs ago in persistent snowdrifts in and near tree shelterbelts in the high plains of northwest Kansas. One must be cautious of red snow in this area, however, because we occasionally get fresh red snow due to soil from dust storms in the Permian "redbeds" in the southern plains.

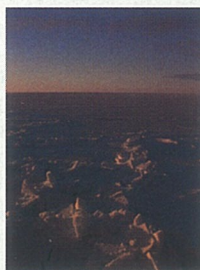
*Richard Bretz
Wallace, Kan.*

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Cover: New mathematical models provide insights into the way brine seeps through sea ice, carrying heat and nutrients. Given the significant impact of polar ice on climate, such information helps researchers design field experiments and develop accurate, large-scale climate models. **Page 106** (Photo: Ken Golden)

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