

SCIENCE NEWS®

The Weekly Newsmagazine of Science

Volume 156, No. 18, October 30, 1999

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Warmest wishes

There is exactly zero reliable scientific data supporting the claim that the world is warming from greenhouse gas emissions ("Acclimating to a warmer world," SN: 8/28/99, p. 136). Though there are computer simulations, no computer model has yet been able to reproduce all the observed climatic effects, such as the diurnal temperature cycle.

Often cited is the old Intergovernmental Panel on Climate Change study. Unfortunately, the many scientists who have repudiated that study are ignored in the media. I suggest, instead, the 1995 Leipzig Declaration signed by about 100 climate specialists.

*Sheldon Jay Price
Haverhill, Mass.*

Finally, there is a realization that the Kyoto agreement is inadequate to solve the global-warming problem to stop the addition of global-warming gases into the atmosphere: Hydrocarbon fuel must be replaced by an alternative that does not add global-warming gases. The only alternative fuel

with that attribute is hydrogen, which contains no carbon. The transition to hydrogen fuel is complex but not impossible. The benefits by far outweigh the cost of doing it. It is better to spend our efforts on a solution to global warming than acclimating to its effects.

*Charles H. Terrey
Phoenix, Ariz.*

Your treatment of the positive aspects of climate change borders on silly. The only item mentioned is "maybe retirement communities might be more willing to relocate to the region." How about fewer deaths in the depths of winter? Or higher plant production from increased carbon dioxide? Or the reduced water required for crops due to decreased water loss in transpiration?

*Michael Carney
Edina, Minn.*

It's about time

The article "Fountains of time" (SN: 8/7/99, p. 92) was very interesting, but I am confused about one issue. What is the effect of relativity on an atomic clock on an airplane?

Won't it guarantee that the clock will have a different time than its land-based cousin in Paris?

*Gary Vugin
Dunwoody, Ga.*

The traveling clock serves as a means to compare the Paris clock with clocks left "home." However, relativity causes the excitation frequency of the atoms in the traveling atomic clock to differ from that of a home clock. Changes in the traveling clock's altitude also affect its timekeeping. Moreover, the Earth's rotation influences the clocks differently. Knowing the traveler's exact path and timing along it, scientists can remove relativistic effects from the traveling clock's reading to come up with a calculated at-home time to compare with the Paris clock's time. —P. Weiss

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Cover: Recent evidence suggests that mental operations of which we remain unaware orchestrate everything from goals considered worth pursuing to our emotional reactions to others. These findings raise questions about the nature of free will.
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