

Grid initiatives. (A list of project URLs can be found at <http://www.mcs.anl.gov/~foster/grid-projects>.) I would also have discussed the various virtual observatory projects (see *PHYSICS TODAY*, February 2002, page 20), and environmental data Grid efforts. I hope that Jacob's letter and my response will clarify that physics problems and physicists are indeed central to the emergence and evolution of Grid computing.

We must all hope, as Jacob suggests, that physics will continue to have the opportunity to pose IT challenges of the magnitude associated with the LHC.

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Sprites and Elves Are Seen but Seldom Quantified

I believe Earle R. Williams's article "Sprites, Elves, and Glow Discharge Tubes" in the November 2001 issue of *PHYSICS TODAY* (page 41) requires additional historical background. For decades, pilots have reported observations of auroralike flashes of light immediately above very large thunderstorm cells; such reports have come particularly from commercial and military pilots who have flown routes along the coast of Central America, home to some of the most severe electrical storms on the planet. Scientists have consistently dismissed these observations as everything from glare on the inside of cockpit windows to tricks played by the minds of sleep-deprived pilots on long-distance flights. Perhaps in the light of this article, some members of the scientific community will not be so quick to dismiss observations made by laypeople.

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WILLIAMS REPLIES: Eyewitness accounts often provide valuable input to scientific progress. If greater attention had been paid to eyewitness reports of transient luminosity in the middle atmosphere, progress in sprites research would no doubt have been quicker. This expectation seems particularly true given greater awareness of C. T. R. Wilson's early predictions on sprites (ref. 1 in my article).

Capps's characterization of quick dismissal by the scientific community is perhaps unjust. Many scientists simply find little to say about qualitative observations. As Lord Kelvin said, "When you measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, . . . your knowledge is of a meager and unsatisfactory kind." Ball lightning is another area in atmospheric electricity in which relatively little progress has been made, largely because good quantitative measurements are scarce.

Given the limitations on article length, I chose to concentrate on aspects of sprites research for which numbers are available and where observations agree and disagree. The earlier historical background Capps mentioned was addressed in the review article by Craig Rodger (ref. 4 in my article). Further discussion of historical observations was given in an older paper that W. A. Lyons and I wrote for the American Meteorological Society's Conference on Atmospheric Electricity in 1993.

I look forward to further discussions with Capps about the eyewitness accounts he mentions, which may not be generally available to other scientists.

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Edward Condon Remembered

In her interesting article "Edward Condon and the Cold War Politics of Loyalty" (*PHYSICS TODAY*, December 2001, page 35), Jessica Wang summarizes the remarkable career and political tragedies of this accomplished physicist. One of his last contributions to science and society, though, is missing.

Between 1966 and 1968, Condon headed the Colorado Project, also known as "The Scientific Study of Unidentified Flying Objects" [and Project Blue Book]. The published results of that work became known as the "Condon Report," and its most famous conclusion was: "Careful consideration of the record as it is available to us leads us to conclude that further extensive study of UFOs probably cannot be justified in the expectation that science will be advanced thereby." Much of the gen-

eral public may still believe that UFOs are piloted spacecraft from alien worlds, but Condon's thorough analysis at least liberated American science from the task of pursuing this illusion.

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The article on Ed Condon taught me much I should have known about the endurance of a scientific leader in the face of political attacks. Condon was kind to me—in a completely different field—when I was the youngest assistant professor in the physics department at the University of Colorado in the mid-1960s. His legacy is the present excellence of the department and of JILA. I miss his puckish humor.

Ed used to offer me a ride in his huge Cadillac; he could barely see over the steering wheel. The first time he offered, I was reluctant, because of his reputation as a terrible driver. He explained that, since he drove a Cadillac (though admittedly secondhand), he could never be accused of being a Communist.

When he was appointed chief scientist on Project Blue Book (a US Air Force-sponsored review of evidence for UFOs), he said that he was chosen because of his history—no one could say that he was automatically biased on the side of the government.

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Jessica Wang's excellent article on Edward Condon's career and trials inspired this letter. He had an ability that may not be fully recognized but that should be mentioned in any evaluation of his career.

Condon was my adviser in graduate school. Early one morning, I entered his office to be greeted with "Bob, what's on your mind that you can admit?" I referred to an article that I did not fully understand in the latest *Physical Review*. He took his unopened copy of the *Review*, turned to the article, scanned it with amazing speed, went to the blackboard, and said, "Are you taking Robertson's course in methods of mathematical physics?" After I said "yes," he explained the article at my level of mathematics.

As we sat and talked, a senior in physics entered and apologized for