

with his choice of his three referees, or the latter acting like three blind mice? Unfortunately, this is not an imaginary case. It is scored here as a particularly crass example of irresponsible censorship amounting to thought control. It may support the more general warning contained in Bellak's letter.

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Previous hyperonic atoms

Page 17 of your November issue carries a report describing the "discovery" of sigma-hyperonic and anti-protonic atoms by the Backenstoss group at CERN. A similar report also appeared in a recent issue of the CERN *Courier*. I should like to point out that several papers concerning earlier observation of lines from sigma-hyperonic atoms have already appeared in print. C. E. Wiegand and R. Kunselman¹ have reported a sigma line in potassium. The NAL-Argonne group (S. Berezin, G. Burleson, D. Eartly, T. O. White and I) have assigned several lines following kaon capture in light elements to this source—in particular, the M_{π} and M_{σ} lines in lithium. Backenstoss has been quoted as mentioning the Wiegand observation, but for reasons I have not been able to understand, fails to mention our considerably more extensive work.²⁻⁴ As we pointed out, there are some interesting discrepancies in these observations; but any other assignment of origin to these lines, especially in lithium, still seems most implausible.

References

1. C. E. Wiegand, R. Kunselman, Argonne Conference on Hypernuclear Physics, Vol. 2, 669, 1969.
2. S. Berezin, G. Burleson, D. Eartly, T. O. White, A. Roberts, in *High Energy Physics and Nuclear Structure*, page 512, Plenum, New York (1970).
3. S. Berezin, G. Burleson, D. Eartly, T. O. White, A. Roberts, *Nuclear Physics B16*, 389 (1970).
4. S. Berezin, G. Burleson, D. Eartly, T. O. White, A. Roberts, *Phys. Rev. A2*, 1623 (1970).

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Interrelated realities

In his review of "Concepts of the Universe" by Paul W. Hodge (November, page 53), Wolfgang Rindler attempts to stem the spreading of the erroneous view that event horizons are unphysical. In so doing, however, Rindler erroneously grants the point that such horizons do not exist in special relativity. The well-known example (see P. G. Bergmann, "The Riddle of Gravitation," of Chapter 15, Scribner's, New York, 1968) of the event horizon seen by

an observer doomed to live forever on a constantly accelerated rocket ship—in special relativity *without* superluminal velocities—should therefore be mentioned: The union of the past light cones from the ship's world line is only a "half space" bounded by a hyperplane; also the less empirically significant union of future cones is a distinct "half space," these two half spaces share a common "quarter space," and there is even a "quarter space" of events that belong to neither. (These latter are the events that are able neither to send light to nor to absorb light from the ship's world line.) Granted that it is easier to get well off the rocket ship (never to return) than to actively penetrate a cosmological horizon, it is important to consider both the observer who stays with the ship and the messenger who leaves the ship. Even in general relativity, an observer can send out messengers who eventually see different horizons (for example, the suicide mission into a "black hole"). Messengers who will see beyond the horizon but who (therefore) can not return make it impossible to deny reality to events over the horizon. The interesting philosophical moral is that we already have a plurality of inter-related realities, even prior to quantum mechanics.

Elihu Lubkin
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The reviewer comments: Elihu Lubkin is of course right in saying that, even in special relativity, suitably *accelerated* observers can have event horizons. What I meant, and therefore should have written, was that such things do not happen in special-relativistic *cosmology*, where the observer-carrying galaxies move inertially and are *not* rocket-propelled.

Wolfgang Rindler
The University of Texas at Dallas

First tunable and visible

"Search and Discovery," in your January issue (page 19), claims that "the Kodak laser is the first cw tunable source in the visible range," but I believe this statement to be erroneous. *Applied Physics Letters* of 1 August 1968 includes a paper by R. L. Byer, M. K. Oshman, J. F. Young and S. E. Harris, all of Stanford University, which reports tuning a cw parametric oscillator from 6800 Å to 7050 Å. Since then, some of the authors and others have extended the tuning range in the course of commercial development.

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The editor comments: Weinberg is correct. The Kodak laser is the first cw tunable laser. □

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