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measures.

Although Borra has apparently rejected the use of gallium (I suggested it to him in December 1986), I hope other astronomers interested in liquid mirrors will take very seriously the health hazards of mercury and the safer alternative of gallium.

EDWARD M. DICKSON
Advantage Quest
6/87
Sunnyvale, California

ANDERSEN REPLIES: To respond to Edward Dickson's concerns about safety, I am quoting a section from one of the two papers referenced¹ in my news story:

"The toxicity of mercury vapors is probably the single concern most often voiced to us... Most of the mercury poisoning incidents (such as the one occurring in Minamata [Japan]) are actually due to mercury salts... Metallic mercury is far less toxic and, unlike some salts, can be eliminated by the human body... Mercury evaporates exceedingly slowly at ambient temperature so that any aeration will get rid of what little vapor is in the air... The vapor concentration in our laboratory was measured by a professional chemist on two separate days... The vapor concentration was ... above industrial safety levels only directly above the mirror and only after operating for several hours in a closed and warm room... The gradient with height in mercury concentration (due to the high mass of Hg) ... suggests that controlling the vapor concentration should be easy to achieve inside a silo-like housing, with weak suction pumps near floor level... There is no need for a human in the mirror room during observations. Mercury vapor poisoning and environmental pollution should therefore not be major problems, provided industrial standards are followed as well as simple common sense."

Reference

1. E. F. Borra, M. Beauchemin, R. Arsenault, R. Lalonde, *Pub. Astron. Soc. Pacific* **97**, 454 (1985).

'Tis a Gift to Be Simple

Alexander Firestone, in his review (August 1987, page 72) of *The Story of the Wand Z* by Peter Watkins, misses the central focus of the book. Firestone is looking at the book only from a physicist's point of view rather than as Watkins intended. In the introduction Watkins states that the "prime aim of this book is to communicate to

continued from page 15

a wider audience some of the excitement of the most recent results from the study of particle physics." Firestone says that he thought that since Watkins is a member of the UA1 group at CERN, the book would be a serious technical discussion of the UA1 experiment.

I am not a physicist, nor do I have a physics background. However, as a physics administrator I enjoy reading, and most of all learning, about physics. Unfortunately, there are not enough good physics books aimed at a general audience.

Watkins shares his knowledge of physics, and the excitement of working on a major experiment, with nonphysicists. Firestone feels that the book would annoy some physicists, and no doubt it would, but for nonphysicists Watkins gives information in layman-like terms to establish a broader understanding of what was going on at UA1. This opens up physics to the rest of us. The ability to simplify complicated ideas is a gift that should be encouraged.

JEAN P. FLANAGAN
Massachusetts Institute of Technology
9/87
Cambridge, Massachusetts

Corporate Job Security and the Bottom Line

I was dismayed by the approbatory tone of William Sweet's news story "Despite Cuts, Basic Research Survives and Revives at Exxon" (July 1987, page 59). I suspect you also outraged the 100 PhDs who were let go. Industrial researchers have in the past expected job security nearly comparable to that of their brethren in universities and government. It was understood by management that a research lab is built up and produces results only over the long term, and will not survive much tampering. In the present climate of mergermania, with next quarter's bottom line the major concern of management, the future of corporate labs is in jeopardy. It can't help to have a professional magazine blessing the halving of an important lab.

Reading between the lines of the article's excess of quotes from Exxon scientists in management, it is hardly surprising that "one-third of the physicists at the corporate lab are currently working on complex fluids," management's pet project. This may not be entirely due to the intrinsic interest of this "pioneering" field. Perhaps in the future we will see similar articles about the salutary effects of letting half the physicists go at Bell Labs, NBS or MIT. Whatever

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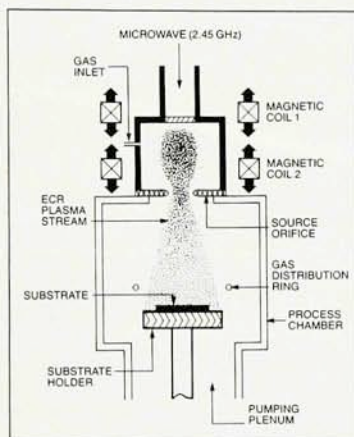
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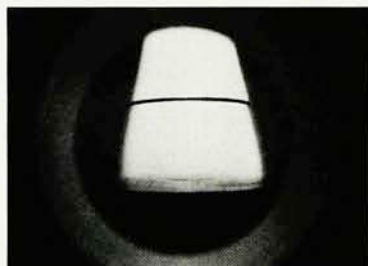
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the facts may be in the case of Exxon, PHYSICS TODAY must see itself as the only advocacy organ we physicists have. If you don't have something nasty to say about Exxon, don't print it at all.

DAVID KLICK

7/87

Chelmsford, Massachusetts

SWEET REPLIES: The news story about Exxon R&E was not intended to put my blessing or the magazine's blessing on the halving of the laboratory's staff. The story intended to take note, as the headline said, that despite the cuts, basic research had revived in a form that seemed likely to enjoy the company's long-term support.

A Very Special Theory of Relativity

John Stachel's contribution, "Einstein and Ether Drift Experiments," in the May 1987 issue (page 45) quotes an interesting sentence from one of Albert Einstein's letters in 1901 to his fiancée, Mileva Marić: "How happy and proud I will be when the two of us together will have brought our work on relative motion to a successful conclusion." Stachel then writes that "this comment raises the intriguing question of the nature of Marić's role in their collaboration. Her letters to Einstein... contain no substantial references at all to physics." In my opinion the answer to this question is rather simple: The "successful conclusion" of the relative motion of the engaged couple is their marriage.

K. SUCHY

*Institut für Theoretische Physik II
der Universität Düsseldorf*

6/87

Düsseldorf, FRG

Of Crays and Creationism

In his letter published in the May 1987 issue (page 145), Arthur S. Lodge conflates two ideas—the origins of life from inanimate precursors, and theories of evolution by natural selection—and profoundly misunderstands one of them—evolution. Natural selection explanations are fundamentally different from the example that Lodge gives: "We need wait only a fairly short time until somewhere a factory full of inanimate matter (electronic components, even) accomplishes by chance the comparatively trivial task of assembling itself into a Cray computer—in working order." Similar statements have been made elsewhere. (Fred Hoyle and Chandra Wickramasinghe,¹ for exam-

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