here for some time, which I hope will make Foner happy. Finally, while we shouldn't be discouraged by theoretical estimates, we insist that there is some value in thinking about them.

MYRON STRONGIN
Brookhaven National Lab.
Upton, N.Y.

Saturn absorption

It was a pleasure to be able to read Carl Sagan's discussion of "The past and future of American astronomy" (December 1974, page 23) after having heard his address to the American Astronomical Society during the special session devoted to its 75th anniversary. There is, however, a small point that bothers me.

In the section on spectroscopy, Sagan mentions "an absorption band at 6183 Å in the body of Saturn . . . now known to be at 6190 Å and is 6 ν_3 of methane." Recent planetary and laboratory spectra of CH_4 (H. Spinrad and L. M. Trafton, *Icarus* **2,** 19, 1963; T. Owen, *Science* **167,** 1675, 1970) show considerable structure, which makes it difficult to assign a band origin or center until a theoretical analysis is made. Furthermore, it appears unlikely that the attribution 6 ν_3 is definitive on the basis of what we presently know from high resolution infrared spectra of CH_4. It seems that an early unproved quantum mechanical assignment has "hardened" over the years into a "scientific fact." The cautionary remarks of G. Herzberg (*Infrared and Raman Spectra of Polyatomic Molecules,* Van Nostrand, New York, N.Y., pages 308–309) are particularly relevant here.

I hope that my comment amounts to more than just nit-picking. If the CH_4 band at 6190 Å were to be studied by multiple-photon laser techniques, it might be essential to know whether the spectral features of interest belong to 6 ν_3 or some other overtone or combination band.

KENNETH FOX
University of Tennessee
Knoxville, Tennessee

Laser corrections

The news story published in the April issue (page 18), entitled "Excitation-Transfer Nitrogen Lasers," contains in its last section one error and several omissions. These deficiencies leave the reader with the false impression that the N_2/SF_6 pin discharge 2nd Positive laser was developed in Los Alamos and subcontracted to The Aerospace Corporation.

The 2nd Positive N_2 bands at 3371 and 3576 A were first made to lase in resistively loaded pin discharges by Steven Suchard, David Sutton and Luis Galvan at Aerospace.[1] The indispensable ingredient to achieve threshold in these relatively slow rise time discharges is SF_6. Ultra-violet laser pulses from this device exceed in duration the N_2C state lifetime of 40 nsec. Independently, George Arnold and Robert Wenzel, of LASL, had observed energy enhancement of a factor of 10 and pulse lengths of 15 nsec with SF_6 addition to a fast rise-time device.[2] Similar effects have recently been reported by other groups operating fast-discharge lasers.[3,4]

Subsequent to the Aerospace discovery, kinetic and parametric studies based on preliminary findings were proposed to Los Alamos. Funding, however, was forthcoming through ERDA headquarters in Washington, D.C. Aerospace is not present "a subcontractor to Los Alamos on this project." This unfortunate phrase and the lack of proper acknowledgments leave the impression cited earlier.

References

1. S. N. Suchard, L. Galvan, D. G. Sutton, Appl. Phys. Lett. **26,** 521 (1975).
2. G. Arnold, R. Wenzel, unpublished data.
3. J. I. Levatter, S. C. Lin, Appl. Phys. Lett. **25,** 703 (1974).
4. C. S. Willett, D. M. Litynski, Appl. Phys. Lett. **26,** 118 (1975).

DAVID G. SUTTON
The Aerospace Corporation
Los Angeles, California

Trivial error/disastrous goof

Albert Claus (May, page 11) called for examples where trivial errors in calculations lead to disastrous goofs. Here is a true story my father enjoys telling on himself.

It all happened one Spring day at the Oak Ridge National Laboratory. And what better place to test a premise with scientific fact? Setting out for a nearby reactor site, Sam Hurst, then a brand-new physicist, was given directions on where to find the company car that was to provide his transportation. He was given a description of the car, its license plate number, and was told that the keys would be beneath the floor mat. Soon, our intrepid sojourner came upon the vehicle in question, and every bit of information was confirmed except that the final digit of the license plate number was off by one. "That's close enough for me," thought Hurst, "my wonderfully logical and scientific mind assures me that only one chance in ten thousand exists for this to be the wrong car." So away he drove, feeling certain that this black Ford was the one intended for his use.

Not long after his arrival at the destination, Sam was relentlessly accosted by the company guards. It seems that

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