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This Week

Research Notes

Articles

Cover: Artist's rendering of an incoming Soviet submarine-launched cruise missile having a 3,000-kilometer range. Intercontinental ballistic missiles launched from Soviet silos can travel even further—and today are largely immune to effective countermeasures until they get relatively close to their target. President Reagan's call to develop defensive weapons for rendering ballistic missiles "impotent and obsolete" has renewed interest in beam weapons and a research commitment to explore their potential. (Illustration: DOD)

Departments

Letters

Practical chaos

I enjoyed the recent article "Escape Into Chaos" (SN: 5/26/84, p. 328). As one whose current interests lie in the study of turbulent fluid flow, I am reminded of the equations of [Edward] Lorenz, a set of three nonlinear, ordinary differential equations that beautifully describe the chaotic behavior of fluids. The dynamics of turbulent fluid flow as described by such deterministic models has far-reaching effects not only in natural systems such as the atmosphere and oceans but also in man-made systems such as internal combustion engines and the solid propellant shuttle motors. In this regard, I was somewhat dismayed to read that many of the researchers in the field are content to tinker with the mathematics only and leave behind the study of the physics of chaos. But let the mathematicians have their fun, escaping into (what are admittedly very beautiful) colored computer plots of transcendental functions, and let them argue amongst themselves whether experimental mathematics is really mathematics at all. The practicing scientist, meanwhile, will deal with the real world aspects of chaotic processes by constructing models that will increase our understanding of how these processes work and, ultimately, how to predict their effects.

Kirk D. Hagen
Salt Lake City, Utah

Coriolis confusion

I would guess that most meteorologists and oceanographers were bothered by the report on the effect of the Coriolis force on crustal movement ("Do crustal slabs rotate as world turns?" SN: 6/9/84, p. 358). One gets the impression that the vortex at any bathtub drain is due to the Coriolis effect, in fact, careful experiments with large basins are necessary to observe this effect directly. Also, while the vertical component of the Coriolis force increases with decreasing latitude, the horizontal component increases towards the poles. This is important to the development of tropical storms and to the nature of the jet-stream circulations that control our weather in the mid-latitudes.

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Love them apples

Sharing Arthur J. Morgan's *lingua-in-bucca* objection to "applephiles" ("Apple sauce," SN: 6/9/84, p. 355), I nevertheless suggest that "megamelophile" is not a lover of big apples, but merely a big lover of apples.

H. M. Davis
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