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Cover: Atmospheric scientists and aeronautical engineers have banded together to produce a new type of unmanned research plane, designed to study previously unexplored parts of the sky. One target destination is the middle of the Antarctic ozone hole — a region (depicted in this schematic painting) too high and remote for other planes to penetrate. (Image: Aurora Flight Sciences/ Joe Spatola)

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Letters

Octahedral illusion

Raymond Bareiss' fascinating column ("Leaning' column creates optical illusion," SN: 1/12/91, p.23) appears to be a close relative of a much older fascinating shape, the octahedron.

When an equilateral octahedron resting on one face is rotated about its vertical axis in 30° increments, its profile changes from a rectangle to a parallelogram leaning almost 20° in one direction, then back to a rectangle, then to a parallelogram leaning in the opposite direction, and so on, repeating the sequence.

When, on each of the two semicircular faces of a Bareiss column, the two endpoints of the diameter are each connected by line segments to the midpoint of the semicircle to form a right isosceles triangle, the vertices of the two triangles can be connected by line segments so as to form a nonequilateral octahedron. The relationship between the two shapes is made

apparent in the accompanying illustration, showing the silhouette of a 1 X 2.06 rectangle inclined 14° from the vertical.

I constructed a model of the Bareiss column depicted in your article and one of the octahedron shown here. The illusion of leaning is even more pronounced in the octahedron than in the column.



Jeffrey D. Mueller
Finksburg, Md.

Child abuse: A vicious cycle?

Correlation does not prove causality. Thus, in interpreting the observations described in

"Charting the aftermath of child abuse" (SN: 1/12/91, p.29), one must also consider the possibility that children with naturally "high levels of aggression" and "deficient social skills" are capable of eliciting abusive responses from previously nonabusive caretakers. Further studies are called for to determine where the abuse cycle starts — particularly studies investigating why certain children experience abuse in consecutive foster homes even when other children in those same homes are not abused.

C.E. Wright
Reno, Nev.

Sticking points

I enjoyed Ivan Amato's sense of humor in "Stuck on Mussels," (SN: 1/5/91, p.8), and the excitement of the biomaterials field was well conveyed.

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