

Court overturns EPA's asbestos ban

A U.S. District Court of Appeals in New Orleans late last month struck down EPA's phaseout of most asbestos products, begun two years ago. In its response, EPA noted that "the Court does not dispute the fact that asbestos is hazardous"—only that EPA "failed to fully meet certain procedural and analytical requirements of the Toxic Substances Control Act." EPA has not decided whether to appeal, says EPA's Al Heier.

Under the act, federal rules to reduce health risks from public exposures to toxic substances must represent the "least burdensome" regulations possible. Thus, the judges concluded, "it was not enough for the EPA to show, as it did in this case, that banning some asbestos products might reduce the harm that could occur from the use of these products." What EPA needed to prove was "that there is not some intermediate state of regulation that would be superior to both the currently regulated and the completely banned world," the judges stated.

They also disputed EPA's weighing of the asbestos ban's costs and benefits. For instance, they concluded that EPA "failed to provide a reasonable basis for the purported benefits of its proposed rule" when the agency refused to evaluate the toxicity of likely asbestos substitutes—especially after receiving "credible evidence" that some planned substitutes may pose a toxic risk equal to or greater than asbestos.

Finally, the judges said EPA inappropriately withheld details on the type of analysis it would use to project the benefits of bans on various asbestos products. EPA decided to rely on an analytical method known as analogous exposure estimates only after the public-comment period had ended, not in the "10 years during which [EPA] was considering the asbestos ban," the judges noted.

Federal contracts can't gag researchers

Federal contracts that require researchers to obtain government approval before publishing or reporting preliminary findings are unconstitutional, the U.S. District Court for the District of Columbia ruled in late September. As a result, the court ordered the National Heart, Lung and Blood Institute (NHLBI) to return to Stanford University a \$1.5 million contract for human trials of a "partial artificial heart." Now, NHLBI's parent agency—the Department of Health and Human Services (HHS)—has appealed that decision.

Last year, NHLBI awarded Stanford researchers a contract to test a "left ventricular assist system" in humans. The institute withdrew that award on Aug. 31, 1990, when the Stanford team refused to accept the contract's "confidentiality" clause. Six days later, NHLBI transferred the award to researchers at St. Louis University Medical Center.

The clause in question barred researchers from publishing any preliminary findings without first obtaining permission from their contract officer, whose decision would be final and binding. HHS maintained that the clause served to prevent Stanford from releasing findings that "could create erroneous conclusions which might threaten public health or safety if acted upon" or that might have "adverse effects on . . . the federal agency."

In his opinion, however, Judge Harold H. Greene called these standards "impermissibly vague." For instance, he asked: What constitutes an adverse effect on a federal agency? "Who will decide whether the conclusions drawn by Stanford are erroneous—the nonscientist contracting officer?"

Greene ruled that the Stanford researchers need not surrender their constitutional right to free speech "to a 'contracting officer' merely because a regulation issued by [the federal government] so directs." Upholding such a clause, he said, "would be an invitation to government censorship wherever public funds flow."

Ron Cowen reports from Palo Alto, Calif., at the annual meeting of the American Astronomical Society's Division for Planetary Sciences

Umbriel: Uranus' oddball satellite

It seems only logical that the brightness of a full moon should equal that of four quarter moons. Yet the surge in brightness far exceeds that value as the moon comes into full view, in part because the shadows cast by its rocky surface vanish in full sun.

Astronomers have found that nearly every planetary satellite has a huge luminosity jump as its entire face becomes visible to an observer. But Umbriel, one of Uranus' five large moons, doesn't fit the pattern.

In studies conducted at Mt. Palomar Observatory near Escondido, Calif., researchers led by Bonnie Buratti of the Jet Propulsion Laboratory in Pasadena, Calif., found that Umbriel's brightness rises only slightly as it comes into full view.

Earlier this year, Buratti and her co-workers reported other evidence suggesting that Umbriel might be a Uranian oddity. Analyzing photographs taken through various color filters by the Voyager 2 spacecraft, they found that the ratio of green light to violet light varies widely over Umbriel's surface.

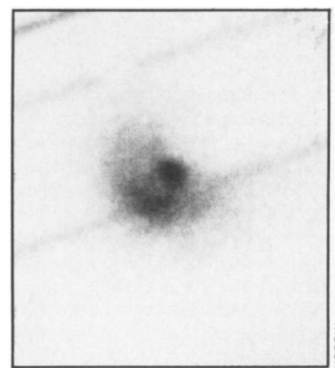
The gradual nature of the color variation seems to rule out the possibility that sharply distinct geologic regions, such as a clustering of craters on one part of the surface, could produce the variation, the researchers say. They propose instead that dark, red dust—possibly the same primordial matter found in comets and asteroids—has settled over large portions of the satellite, and that variations in the thickness of the dust layer could account for the color variations.

Astronomers have generally thought that satellites that don't brighten substantially in full sunlight most likely have smooth, compact surfaces. But Buratti says her group's new laboratory simulations indicate that compact surfaces do brighten significantly. However, surfaces composed of finely ground, fluffy dust particles brighten only slightly.

"The surface properties of Umbriel," she concludes, "are much different from the properties of other Uranian satellites and probably [any] other satellite in the solar system."

Halley's outburst and its aftermath

This image of Comet Halley, taken in February just weeks after the receding comet had unexpectedly brightened at a distance of some 2 million kilometers from the sun, may shed new light on the nature of the luminous outburst (SN: 3/2/91, p.133). Released last week, the photograph shows that the comet's highly reflective shroud of dust, or coma, which had nearly vanished before the outburst, has been replenished and has taken on an asymmetric shape.



Coma makes a comeback.

These features support the notion that the sun slowly vaporized a small amount of frozen material, possibly carbon dioxide, within the icy comet, says Karen J. Meech of the University of Hawaii in Honolulu. The resulting gas pocket could have eventually burst through a tiny vent in the comet's crust, creating the asymmetric coma, researchers suggest.

Meech took this photo with the University of Hawaii's 2.2-meter telescope atop Mauna Kea. She says her follow-up observations reveal that a coma persisted at least until May, casting doubt on recent suggestions that the sudden shock wave of a solar flare had caused the outburst (SN: 10/12/91, p.239). A coma created by a flare would likely have lasted for a shorter time, Meech says.