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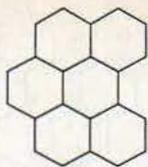
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CONTINUUM

WHAT DO EARTHQUAKES AND UFOs HAVE IN COMMON?

Look! A strange light! Is it a UFO from outer space? No, it's electricity from the earth.

John Derr, a geophysicist with the U.S. Geological Survey in Albuquerque, New Mexico, has determined that the phenomena glimpsed in many UFO sightings may actually be balls of electricity related to earthquakes. Derr and Michael Pensinger, a professor at Laurentian University in Ontario, Canada, tapped into a database of UFO sightings compiled by the Center for UFO Studies and cross-correlated the sightings with reports of seismic activity. "When we started looking at it area by area, certain patterns began to emerge," he says.

For example, residents of New Mexico reported UFO sightings in 1951 and 1952 within 60 miles of the epicenters of three temblors measuring 4 to 5 on the Richter scale that occurred less than a year later.

"Earthquake lights" tend to be basketball-sized globes of glowing electricity generated by crushing rock or changes in ground-water flow related to underground pressure. They can appear

for months before and months after earthquakes.

"Sightings that can best be explained as earthquake lights are objects seen at ground level or objects in the sky that have a discontinuous path," Derr explains. "Our statistics suggest that eighty percent of such sightings could be geophysical in origin."

"There's been a lot of anecdotal information regarding electrical phenomena

SKIN ACCOUNTS FOR 16 PERCENT OF YOUR BODY WEIGHT.

and earthquakes, but I haven't seen anything that really documents it very well," says Jim Mori, a seismologist with the Geological Survey in Pasadena, California. "During the June 1992 earthquakes in Los Angeles, there was a lot of arcing of electrical transformers. Certainly those aren't earthquake lights, but in some situations, it may provide a good explanation of what people saw. However, in the 1989 San Francisco quake, some electromagnetic waves were recorded minutes before it started."—Don Vaughan

FANNING THE FLAMES IN SPACE

Fire poses one of the most serious threats to a crew living in the confines of a spacecraft or space station. That's why NASA researchers want to know as much as possible about how fire behaves in space, particularly on the planned Space Station *Freedom*.

Experiments on *Skylab* in 1974 found that fires in orbiting spacecraft spread only one-tenth to one-half as fast as they do on Earth. Under normal gravity, hot—and thus lighter—combustion gases flow upward, and fresh, oxygen-rich air is pulled in to replace them, fueling the fire. But in space, where there is no "up"—and no corresponding buoyant flows—the lighter gases don't rise, and fresh oxygen isn't drawn in as quickly.

Those experiments, however, were conducted in still air. Now, drop-tower work at NASA Lewis Research Center in Cleveland, Ohio, suggests that when a 7- to 20-centimeter-per-second breeze—

about what *Freedom's* ventilation system would generate—wafts through the cabin, flames could spread as fast in near weightlessness as they do under normal gravity. Researchers expected that air movement in the cabin would supplement the influx of oxygen usually provided by buoyant flows, but the strength of the effect surprised them, according to NASA aerospace engineer Robert Friedman, who cautions that much more experimentation is needed.

The research findings could affect several aspects of *Freedom's* design, including the proposed carbon-dioxide fire-extinguishing system. The pipes leading from the supply tanks to the discharge outlets are normally filled with air. The initial rush of that air from the pipes before the carbon dioxide emerges, however, might briefly accelerate the blaze because of the air velocity's strong influence in low gravity.—Ted Scala

Electromagnetic activity preceded the 1989 San Francisco earthquake.

