

Severe meteor bombardment could destroy satellites

Satellite operators, insurers and scientists met to discuss how to prepare for the storm

The Associated Press

MANHATTAN BEACH, Calif. — In November, the Earth's atmosphere will be hit by the most severe meteor shower in 33 years — a bombardment of debris that could damage or destroy some of the nearly 500 satellites that provide worldwide communications, navigation and weather-watching.

The debris consists only of particles — some thinner than a hair and most no larger than a grain of sand — but they are hurtling through space so fast that they can have the destructive power of a .22-caliber bullet.

As a result, about 200 commercial and military satellite operators,

insurers and scientists began brainstorming Monday about what they can do to prepare, such as turning off spacecraft or turning them away from the stream of particles. The two-day gathering is called the Leonid Meteoroid Storm and Satellite Threat Conference.

"The consequences are still virtually unknown. There has not been a meteor storm since the onset of the modern space age. Nobody planned for it," said Peter Brown, a physics and astronomy graduate student at the University of Western Ontario, who advises satellite operators.

The particles, known as meteoroids, are vastly smaller than the asteroids that could one day slam into Earth, and none are expected to come anywhere near the surface of the planet when they strike this November and again in November 1999.

But before the particles burn up in Earth's atmosphere, they could

poke holes in solar panels, pit lenses, blast reflective coating off mirrors, short out electronics with a burst of electromagnetic energy, or even reprogram computers, said Edward Tagliaferri, a consultant for Aerospace Corp., a non-profit organization.

In 1993, for example, a meteor struck the European Space Agency's Olympus satellite and destroyed its directional control, rendering it useless.

"What if you get unlucky?" Delbert Smith, a Washington lawyer who represents international networks and satellite operators, asked at the conference. "Who's going to explain to the major corporations your satellites aren't there anymore?"

While only a couple of satellites might get disabled — and some cost as much as \$500 million — all of them will suffer surface dam-

age, said David Lynch, a scientist with the Aerospace Corp.

Military satellites are better shielded because most are built to withstand nuclear assault. But unlike commercial spacecraft that can be turned off temporarily, military satellites "can't afford to be off the air," Tagliaferri said.

The Hubble Space Telescope — which suffered minor surface damage in the 1993 shower — will move to protect itself against Leonid damage by turning away from the stream of particles, an option being considered by many satellite owners.

First reported by Chinese astronomers back in 902, the Leonid meteoroid storms — so-named because they are found in front of the constellation Leo — become intense every 33 years. They occur when Earth passes through a trail of dust left behind by the comet Tempel-Tuttle.

Scientists aren't sure when the

heaviest showers will occur — Nov. 17, 1998, or Nov. 18, 1999.

The spectacular showers will be visible this year across the Western Pacific and Eastern Asia; the 1999 showers will be visible in the Middle East, Eastern Europe and Central Asia. Storms will last 90 minutes to two hours.

Back in 1966, when fewer than 100 satellites circled the Earth, the comet produced peak showers of 144,000 meteors each hour and no major damage. This year, with more than five times the number of circling spacecraft, some experts think the rate could be 5,000 to 100,000 an hour.

But astronomer Donald Yeomans of NASA's Jet Propulsion Laboratory in Pasadena put the rate as low as 500 to 2,000 particles per hour. And Brown agreed that the rate won't be as high as it was in 1966.

House Republicans plan to offer many anti-drug proposals

One proposal is to cut student loan eligibility to recipients convicted of drug offenses

By David Espo

The Associated Press

WASHINGTON — House Republicans intend to unveil an election-year package of anti-drug proposals this week ranging from more money for border guards to tougher penalties for certain crimes to grants for small

businesses that fight workplace drug use.

Republicans also will propose cutting off student-loan eligibility to recipients convicted of drug possession or trafficking, according to GOP officials, who spoke on a condition of anonymity.

These officials said House Speaker Newt Gingrich and other Republicans intend to announce the legislation Thursday at a ceremony planned for the

steps of the Capitol. They will be joined by a member of the gold medal-winning U.S. women's hockey team from last winter's Olympic Games in Japan, as well as members of a drug task force that Gingrich established under the direction of Rep. Dennis Hastert, R-Ill.

Also on Thursday, Republicans intend to bring one drug-related measure to the House floor. It would cut off direct or indirect federal money for any needle exchange program for ad-

dicts.

The Clinton administration announced last week it would refuse to use federal tax dollars to buy clean needles for drug addicts, even though it said needle exchanges fight AIDS without encouraging illegal drug use.

One Republican aide said the GOP measure is designed to deny funding to organizations that use their own money to run needle exchange programs.

The Republican effort, coordinated by Hastert, comes six months before midterm elections in which both parties are laboring to win support among voters for their efforts to combat drugs.

The administration's Office of National Drug Control Policy re-

cently unveiled a 10-year drug-control strategy. And President Clinton, in last winter's State of the Union address, asked Congress to pay for an additional 1,000 border guards and deploy new technologies to help combat the flow of drugs.

For their part, House Democrats have scheduled a pre-emptive strike Wednesday — the day before the GOP announcement — at which they are expected to criticize Republicans for voting in the past to cut spending on existing anti-drug programs.

Polls consistently show that voters are concerned about drugs, and one official involved in planning the Republican effort said Gingrich and others hope to communicate a "unified, consistent no-use message."



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