derstand global issues such as climate change, says retired Admiral James Watkins, who headed the Energy Department during the rise and fall of another big-science project, the Superconducting Super Collider.

Ehlers hopes that the House will adopt a resolution endorsing the report as a first step toward implementing its recommendations. And although Brown and other key Democrats are already voicing their concerns, many lawmakers have backed the report after being lobbied by university administrators in their districts who like its message. "It's not an especially partisan document, so it could spur a very useful debate," says one House staffer. Most important, he says, Gingrich's support means "it has what most reports lack—a powerful patron." **–DAVID MALAKOFF**

ASTROPHYSICS

Distant Star's Radiation Jolts Earth's Atmosphere

On 27 August at about 3:22 a.m. Pacific Daylight Time, a tidal wave of x-ray and gamma ray radiation washed over Earth, turning night to day in the upper atmosphere and shocking some satellite instruments into a self-preserving "safe hold" mode. The burst was reported at a NASA press conference in Washington, D.C., last Tuesday, but it apparently got its start 20,000 years ago and as many light-years away, when a superdense, supermagnetized neutron star suffered a massive "star-quake." Neutron stars are well-known x-ray sources, but this massive burst is "about the wildest thing in 30 years since we've been monitoring these things," says astrophysicist Kevin Hurley at the University of California, Berkeley.

The intensity of the 5-minute pulse was negligible at Earth's surface, but in space, it "was about a tenth of a dental x-ray dose," Hurley estimates. "It's a hell of a lot of radiation for a source that far away." An astronaut a tenth of a light-year away would have received a fatal dose in less than a second; near Earth the deluge was enough to trigger the momentary shutdown of equipment on NASA's Rossi X-ray Timing Explorer and on the NEAR and Konus-Wind spacecraft. It was also enough to leave its fingerprints on Earth's atmosphere.

One of the many phones that rang that August morning when the satellites felt the assault belonged to Umran Inan, a Stanford University physicist. Inan jumped out of bed to check the state of the ionosphere—the ionized layer of the upper atmosphere. He runs the Holographic Array for Ionospheric Lightning research (HAIL), a string of 50 radio antennas located in the backyards of high schools from Wyoming to New Mexico that monitors very low frequency radio broadcasts (with wavelengths tens of meters long), which the U.S. Navy uses to communicate with ships and submarines. By tracking the strength and the phase of the waves, HAIL can detect changes in the altitude of the ionosphere. A thicker ionosphere tends to act as a large pillow, weakening radio signals as they bounce between it and Earth's surface.

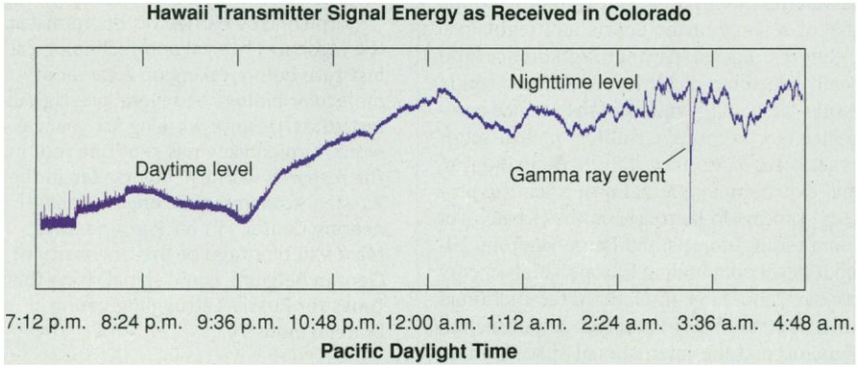
Inan and colleagues found that the strength of Navy radio signals from Hawaii and Seattle suddenly plummeted at the time the pulse swept over Earth. Those signals had bounced off the nighttime ionosphere, which normally hovers some 85 kilometers above Earth's surface. During the day radiation from the sun ionizes more molecules, substantially thickening the ionosphere. The weakening of the signals during the radiation pulse, Inan says, shows that the ionosphere's inner edge briefly plunged to 60 kilometers, about where it sits during the full force of daylight sun. It's the first time a pulse from outside the solar system has had such a drastic effect on the atmosphere, he says. Budding scientists at participating high schools weren't allowed to share in the excitement, however. "We couldn't tell them because of the news release" scheduled for this week, Inan says.

The origin of the pulse became clear when researchers noticed that its intensity varied with a 5.16-second cycle—the exact frequency of the x-ray source SGR 1900+14, located in the constellation of Aquila (the eagle), which had recently been acting up. The relative timing of the wave as it hit each of the satellites also pegged SGR 1900+14 as its origin. The object is thought to be a neutron star, which spews out x-rays from a hot spot as it rotates. "It's an x-ray lighthouse," says Hurley.

The surge, however, pointed to an unusually big convulsion on SGR 1900+14. Neutron stars, the dense embers of burned-out stars, inherit the magnetic fields of their parent stars and can concentrate those fields to enormous strengths. The magnetic field of such a "magnetar" would periodically tear apart the star's hard crust of heavy elements, relieving stress as in an earthquake. Particles shot upward in the quake would be accelerated by the magnetic field, producing a strong wave of radiation. To generate a burst of the magnitude that struck Earth, Hurley says, the field would have to be at least 10^{14} gauss, about 100 trillion times stronger than Earth's.

Could a nearby magnetar threaten the human race? "Yeah, I did that calculation," Hurley says. To trigger chemical reactions that would destroy the ozone layer, the explosion would have had to occur as close as the comet belts that girdle the solar system. A magnetar hiding there would have been sniffed out long ago, he says.

–DAVID KESTENBAUM



Day for night. Radio signals bouncing off the nighttime ionosphere briefly weakened to daytime levels on 27 August, as a pulse of stellar radiation reached Earth.

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INFORMATION SCIENCES

Japan Urged to Open Up Planning for Lab

TOKYO—In a country that prizes consensus, a group of university professors is planning to skirt official channels in a bold step to influence plans for a new national laboratory. The researchers fear that plans for the lab, tentatively named the National Informatics Institute, might be overly influenced by one person: electrical engineer Hiroshi Inose, a senior scientist formerly at the University of Tokyo. Meeting informally 2 weeks ago, the group put together a plan to seek government support for a broader review of the field before plans for the institute are finalized. In addition to buying time, the approach is in line with efforts to place all areas of scientific decision-making under closer public scrutiny (*Science*, 4 September, p. 1435).

"We may be losing the chance to set up a truly vibrant new national institute," says Tuneyoshi Kamae, a physicist at the University of Tokyo who has closely followed the planning for the new institute. Adds Hideo Miyahara, a computer scientist at Osaka University, "We are trying to have the opinions of the entire information science community re-