dean of the University of Washington's school of public health.

Clymer has another approach: She suggests that instead of blaming the Japanese for tapping into their research, Americans should learn from their example. "If I were a CEO of a biotech company that had just been targeted for extinction by the Japanese, I'd go to Japan and set up a research center. I'd scour the country for appropriate technology and excellent science." Perhaps the biotech trade organizations should set up offices in Tokyo where they track hot ideas in biotech research and development. She says that the Japanese have been responding to American criticism by opening up more of their research to Americans—but few Americans have been takers so far. What's dangerous, she says, is the "hubris of the United States that they don't have as much to contribute as we do."

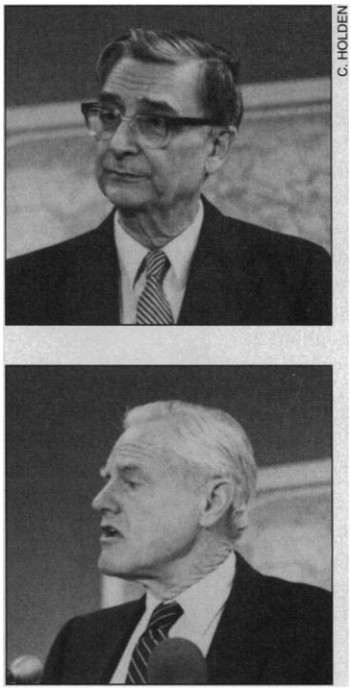
For the near future, however, it is clear that these complex issues will continue to be tested first on American soil. And when East meets West, it may not be a bad idea for both sides to take precautions before they enter into an agreement. There are all kinds of safeguards both sides can take, and UC Irvine and Hitachi covered the waterfront: Before they broke ground on the new research center, not only did they complete a 40-page set of guidelines spelling out everything from sharing Hitachi's DNA sequencers and conference rooms to hiring graduate students, they also asked four Shinto priests to bless the site of the new research center.

–Ann Gibbons

ENVIRONMENT

Scientists' Campaign to Save Earth

The Union of Concerned Scientists (UCS), departing from its traditional preoccupation with nuclear war, is now spearheading a campaign to alert the world to a different kind of holocaust: humans' destruction of their life support system. Last week, it issued a "Warning to Humanity," signed by 1500 scientists from around the world, saying that "human beings and the natural world are on a collision course," which "may so alter the living world that it will be unable to sustain life in the manner that we know."



C. HOLDEN

Sounding the alarm. Edward O. Wilson *(top)* and Henry Kendall.

At a 17 November press conference in Washington, D.C., MIT physicist and UCS chairman Henry Kendall was joined by Harvard biologist E.O. Wilson, Cambridge University astrophysicist Sir Martin Rees, Yale economist James Tobin, and soil biologist Johanna Dobereiner of the Brazilian Academy of Sciences. Characterizing the "warning" as the kickoff to a sustained campaign aimed at government, industry, and religious leaders worldwide, the scientists explained that the plea consists of five basic goals: a curb on environmentally damaging activities such as fossil fuel use; more efficient use of natural resources; stabilization of population growth; reduction of poverty; and equality between the sexes.

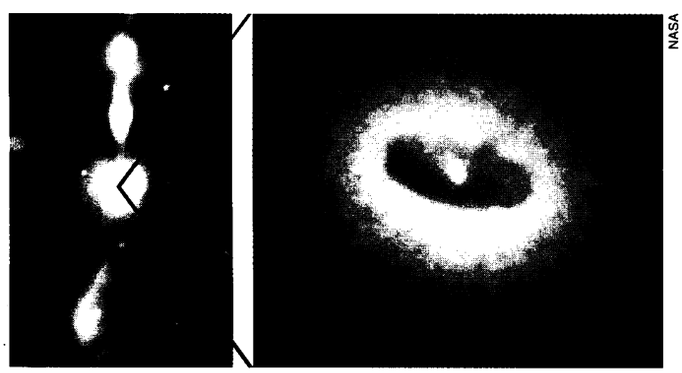
Kendall claimed that "an astonishing number of the most senior scientists in the world" have signed the plea—including 99 Nobel Prize–winners, a dozen national academies of science, the Pontifical Academy of Sciences, and the director-general of UNESCO. Conspicuously absent from the roster was Frank Press, president of the U.S. National Academy of Sciences (NAS). An academy spokesman says Press consulted with the NAS council on the matter and decided to reaffirm a "long-standing policy" that it is "unwise" for the NAS president to sign any petition that the academy has not had a role in drafting.

–Constance Holden

ASTRONOMY

Breakfast of a Champion?

Astronomers have long suspected that a massive black hole lies in the center of the galaxy NGC4261. Now they believe they have captured an image, if not of the black hole itself, at least of its breakfast—a 300-light-year wide pancake of dust and gas that appears to be swirling inward toward the putative black hole. This "accretion disk," photographed by the Hubble Space Telescope, could be the energy source for the black hole—if it exists.



NASA

Thar she blows. 45,000-light-year-long radio jets (seen in the ground-based image at left) spout from a disk and possible black hole.

Researchers focused Hubble on NGC4261 because, like some other galaxies, it shoots out two "jets" of energetic particles that act as powerful beacons of radio waves. To some astronomers, such jets are like the spout of a whale—a sign that a black hole containing millions of times the mass of the sun lurks at their base. The energy powering the jets, theorists speculate, is generated as the black hole sucks in material from a surrounding accretion disk. The disk "is the storage place—where material works its way into the hole," says Walter Jaffe of the Leiden Observatory in the Netherlands, who led the group that made the observation.

And now Jaffe and his colleagues have spotted a picture-perfect disk ringing the base of the jets—the first convincing evidence of an accretion disk ever seen, he says. "The idea of these disks has been around for a long time, but now we are finally seeing one." And in just the right position, perpendicular to the jets, notes astronomer Daniel Weedman of Pennsylvania State University. "That alignment to me is the most important thing," he says. But he notes that even though the other pieces of the picture are in place, the evidence for the black hole itself is still circumstantial. "I have reservations," he says. "I don't think we truly know what's going on in that spot in the center of the disk."

Jaffe agrees that astronomers have yet to prove the existence of any black hole. But he expects to have a strong case for this one as soon as he can measure the speed of material swirling near the center of the disk, to see if the mass dragging it inward is more than 10 times that of the sun. No other object could pack the necessary mass into such a small space. "Then it will be hard to say it's not a black hole," Jaffe says.

–Faye Flam