NETWATCH

edited by Jocelyn Kaiser

KIYOKAZU YOSHIDA, OSAKA UNIV.

NET NEWS

Microscopy Across an Ocean

A big push by biologists to use computer networks to operate rare instruments from afar passed a major milestone on 25 June: Scientists took a spin on the world's most powerful electron microscope in Japan—while sitting 6000 kilometers away in California.

Six years ago, University of California, San Diego, neuroscientist Mark Ellisman thrilled audiences at a conference in Chicago by using the Internet to control an electron microscope in San Diego. Several U.S. agencies jumped in to fund projects for operating microscopes by remote control, and by now at least a dozen groups are doing so in the United States. Ellisman's team has since moved on to the Mount Everest of microscopes: Osaka University's Ultra High Voltage Electron Microscope, a 3,000,000-volt behemoth that can create three-dimensional images from much thicker samples (such as biological cells) than ordinary microscopes can. Ellisman and his U.S. and Japanese colleagues wondered if they could operate this instrument's roomful of controls from across the Pacific Ocean.

They showed they could. Over 5 hours, San Diego scientists imaged nerve cells from a rat and a frog without setting foot in Japan, controlling things like focus and specimen position across a private data line while the images came in across a satellite video link. Ellisman says this lays the groundwork for researchers all over the United States and Japan to borrow each others' specialized microscopes, probably via a high-speed Internet link, "within a year or two."

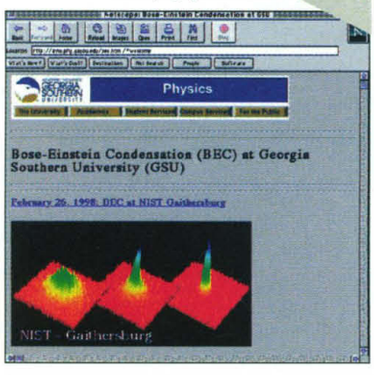
SITE VISIT

Talking Condensates

After physicists rocked the world 3 years ago by coaxing supercold rubidium gas into a new form of matter, dozens of labs have sprung into hot pursuit of Bose-Einstein Condensation (BEC), a state in which individual atoms merge and act as a single giant atom. On the Web, the condensate community congregates at the BEC page hosted by Georgia Southern University in Statesboro.

As might be expected in a field that is, after all, only in its infancy, this site is a bit chaotic but buzzes with energy and fresh content. Webmaster Mark Edwards says the biggest draw is the condensate bibliography, which lists some 500 online papers, mostly posted at the Los Alamos e-prints server. There's a "popular page," packed with BEC e-clippings from newspapers, magazine profiles of scientists, and other news, such as a write-up on a BEC paper currently topping the physics list for citations. The site also tracks conferences and talks, and links to researchers' Web pages. Perhaps best of all, the site features bulletins on major condensate results, which have been coming thick and fast—about once a month so far this year. The happy ending to a 20-year search for hydrogen BEC, for example, was reported here by MIT researchers on 24 June before it hit a scientific meeting (see this issue's News of the Week). "I have some pretty reliable sources who have their ears open," Edwards says.

amo.phy.gasou.edu/bec.html/



COOL IMAGES

Damsels in Digital Dress

Get up close and personal with damselflies like this one (a *Hetaerina americana*) at the Damselflies of Texas* site, the brainchild of Texas A&M entomologist Forrest Mitchell. Not long ago, Mitchell, who studies whether some insects can serve as canaries in a coalmine for water quality, developed a way to capture the brilliant colors of dragonflies by scanning them into a computer (*Science*, 30 May 1997, p.1341). Now in addition to his Web dragonfly museum, he's created a gallery of scanned images and field photos of damselflies. The scans have such sharp resolution and true-to-life color, it's as if your computer screen were a car windshield milliseconds before splatter.

* stephenville.tamu.edu/~fmitchel/damselfly/index.html

HOT PICKS

Hold your breath. What wicked brew can you expect from mixing a rainstorm with ozone from cars and soot from smokestacks? Air-quality experts can now simulate how these pollutants interact and move across the country with Models-3, a new Environmental Protection Agency computer program 7 years in the making. To view a tutorial and order the system, see www.epa.gov/asmdnerl/models3/

Science info glut. Although clunky to navigate, a site called Martindale's Reference Desk is a goldmine of science resources: hundreds of multimedia courses and tutorials, databases, calculators, and more in a wide range of disciplines, from medicine to materials science. www-sci.lib.uci.edu/HSG/Ref.html

Who will pay for Why. The Why Files has won praise for its lively features explaining "the science behind the news," from the Mars rock to AIDS drugs. Now the 3-year-old, National Science Foundation–funded pilot just got permanent sponsorship from the University of Wisconsin, Madison. whyfiles.news.wisc.edu/

SCIENCE ONLINE

Want some help keeping up with hot papers in your field? Try CiteTrack, a personalized e-mail alert system now available to *Science* Online individual subscribers. After choosing terms such as key word, author, citations, and subject, you'll receive notices of new articles in more than 30 journals produced with the assistance of HighWire Press. www.sciencemag.org/help/citetrack/

Send Internet news and great Web site suggestions to netwatch@aaas.org