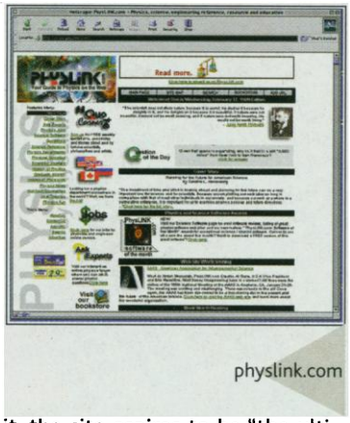
SITE VISIT

Physics Connection



If space is expanding, why is it still 5000 kilometers from New York to San Francisco? The answer to this and other physics questions can be found at PhysLINK.com, a Web site for researchers, students, teachers, and people simply curious about physics.

As its creator, University of Southern California grad student Anton Skorucak, puts it, the site aspires to be "the ultimate physics resource on the Web." Commercially sponsored but mostly free, it includes an Ask Experts feature, essays on science's relevance to art and society, and links to the history of physics and picture galleries. Want to learn about the design of amusement park rides? Find out in Physics Fun, which also offers a plethora of jokes and cartoons.

Researchers may prefer Science Reference, where a few clicks bring up the periodic table, fundamental physical constants, conversion units, and other handy information. There are links to journals, databases of research papers, and physics societies around the world. Monthly software reviews cover everything from data analysis software to an educational program that simulates the trajectories of particles in a particle chamber.

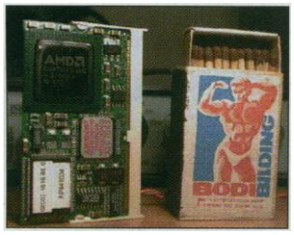
Prospective grad students might find useful the Graduate Advisor section, with info about the GRE tests, grad programs in specific fields, and funding sources. After graduation, they can check out a listing of physics jobs.

NET NEWS

Lilliputian Web Server

A Stanford computer scientist has broken the record for the world's smallest Web server. Go to wearables.stanford.edu, and a computer the size of a matchbox (below) will display a Web page describing the device and count your hits.

The mite-sized server is also the tiniest PC so far. "It has all the functionality of your desktop computer," other than power supply, monitor, and keyboard, says Stanford's Vaughan Pratt, who created it last month. That means that unlike other tiny electronic devices—such as a Palm Pilot electronic organizer—it has a grown-up operating system (Linux) and runs the same software as PCs. Built with newly available, very compact off-the-shelf components, the minicomputer has 16 megabytes of file storage, enough to hold a couple hundred text Web pages with some graphics. The previous record holder for smallest Web server was a device made in 1996 by Phar Lap Software that's about 230 cubic centimeters in volume—more than 10 times bigger.

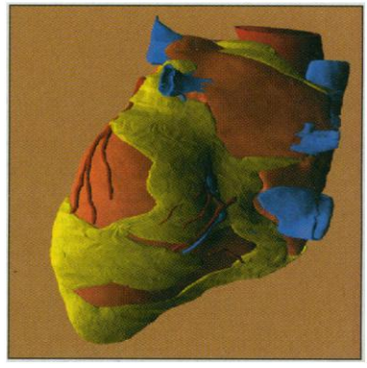


Such tiny computers could lighten the load of people who now schlepp laptops, Pratt says. And, equipped with a wireless modem, it could function as a wearable Web server that scientists might use to relay data to the Internet from the field, or for high-tech mountain climbers to post logs of their adventures.

COOL IMAGES

Body Surfing

Cutting up cadavers while poring over a textbook used to be the only way to learn anatomy. These days there's a less messy alternative: online reconstructions such as this heart, from the Digital Anatomist Project* at the University of Washington, Seattle. In the 1980s, this group began slicing up cadavers, digitizing images of the slices, and using a computer to turn the 2D images into 3D structures. The effort inspired the National Library of Medicine's Visible Human Project, which has put data for two entire human bodies online.† At the Washington Web site, where bright colors help students pick out structures, you'll find atlases of the brain, thoracic organs, and the knee—mostly still images but also a few movies. Visitors can click to request labels, or take a quiz (can you find the ascending aorta and the pulmonary veins?).



* sig.biostr.washington.edu/projects/da

† www.nlm.nih.gov/research/visible/visible_human.html

HOT PICKS

Uncertain history. The uncertainty principle, which says you can't know an electron's precise position and momentum at the same time, is one focus of this new online exhibit on Werner Heisenberg. It describes the German physicist's early quantum mechanics work, his involvement in Nazi fission research, and his role in reviving postwar German science. www.aip.org/history/heisenberg

Full-course load. Whether you're a student brushing up on solid state physics or a professor planning an environmental science course, the World Lecture Hall may help. Hundreds of professors have posted links to their online course material, from archaeology to genetics and rainforest research. www.utexas.edu/world/lecture

Drug store. Wondering what Demerol looks like, or how lithium helps control mania? This site lists practically every class of drugs you can think of, shows the drugs' chemical structure, and briefly describes their biochemistry. members.home.net/pharmcentral

Science ONLINE

Women are far more likely than men to suffer from autoimmune diseases such as lupus and rheumatoid arthritis. In the Perspective on p. 1277, a scientific task force discusses possible reasons for this gender gap. Go online to read the group's full report, including recommendations for policy and research. www.sciencemag.org/feature/data/983519.shl

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