# NETWATCH

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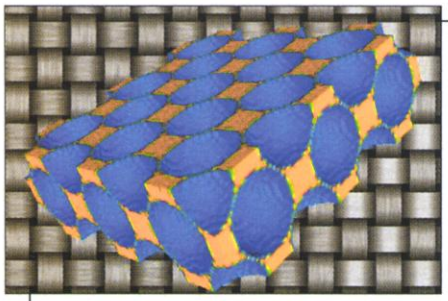

IMAGES

## Guiding Light

Someday when you've tossed out your VCR because watching movies on the Internet is so much easier, you may thank tiny structures like this. It's a piece of photonic crystal—a lattice for manipulating photons in much the same way that semiconductors handle electrons. Such crystals may lead to computers that run at the speed of light. But fabricating them is tricky: The channels must be just hundreds or even tens of nanometers across, so as to block certain light wavelengths. This "inverted opal" design has been made by jiggling balls of latex "like shaking glass marbles in a box," filling the space between them with silicon, then burning off the latex, says Andrew Reynolds, a newly minted Ph.D. engineer at the University of Glasgow in Scotland. At Reynolds's photonics Web site* you can see a sampling of crystals made so far, and even explore some in virtual reality.

* www.elec.gla.ac.uk/~areynolds

PHOTOJOURNAL

## Jupiter Up Close

As it hurtles toward Saturn, the Cassini spacecraft is stealing an extra kick from Jupiter's gravitational field—and taking a few stunning snapshots along the way. Launched in 1997, Cassini is armed with a panoply of cameras and scientific instruments that it will use to study Saturn after it arrives in 2004. But while in the neighborhood, it's now aiming those cameras at Jupiter.

The craft made its closest approach on 30 December, and NASA has been releasing images almost every day on the Web.* The one at left from 1 December shows newly discovered details in the Great Red Spot.

* ciclops.lpl.arizona.edu

EDUCATION

## Victorian Eclipse Chasing

Just as solar eclipses today inspire people to jet halfway around the world, in the 19th century they had a powerful pull, too. The 1878 eclipse inspired Maria Mitchell—the first U.S. woman astronomy professor—to lead an all-women expedition from Vassar College in New York to Denver, Colorado, to witness the event at high altitude. A new educational site chronicles the group's 2000-mile train trip and the world's reaction to the eclipse with clippings from local newspapers and *Nature*. Aimed at high school students, the site also has teaching plans for a "virtual solar eclipse expedition."

vassun.vassar.edu/~physastr/mariamitchell

RESOURCES

## Proteins in 31 Flavors

Contrary to appearances, people and slime molds have a lot in common: around 1000 genes. That explains why biologists trying to decipher a gene's function will look for similar genes and the proteins they code for in other species. Toward that end, the European Bioinformatics Institute, U.K., has just released results from a massive exercise that compared what's known about 31 sequenced genomes (including many microbes and the fruit fly). Using a program called GeneQuiz that runs on supercomputers to crunch data from public databases, the group predicted functions for more than 40,000 of 73,500 surveyed genes—15% more than had originally been reported. Generate a report on your favorite gene by following the links at www.ebi.ac.uk

REFERENCES

## Bio 101 Meets the Internet

The textbook is dead. Or rather, it will be replaced within 5 years by the virtual Internet textbook, predicts John Kimball, a retired biologist who taught at Harvard and Tufts universities. "I think the printed biology text is a dinosaur," he says.

Rising up in its place are sites such as Kimball's Biology Pages, which he launched 3 years ago as the online version of his undergraduate text, *Biology*. If you've forgotten basic biological concepts such as how plants transport water, or if you never learned them, here's the place to find out. Indeed, the site is as much a basic reference as a textbook: You can look up entries alphabetically or search by topic on everything from evolution to genetics, flower growth to zygote. Pages within offer in-depth explanations and illustrations, along with crosslinks to related subjects.

Kimball revises the content almost every day, adding discoveries in the news and links. For example, a recent update on endostatin—the potential drug for fighting cancer by cutting the blood supply to tumors—leads to a backgrounder on cancer and blood vessel growth and to another on how drug trials are conducted.

www.ultranet.com/~jkimball/BiologyPages

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

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