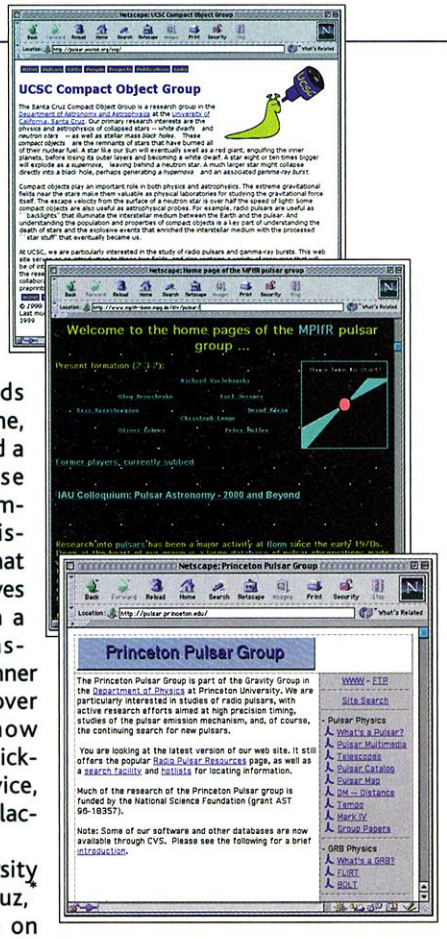
NETWATCH

edited by JOCELYN KAISER

SITE VISITS

Cosmic Buzz



Considering that nobody can hear you scream in space, it's weird to think that there are cosmic objects that make sounds like a buzzing power line, a purring car engine, and a metronome. The noise sources are pulsars: compact, spinning stars discovered 33 years ago that emit bursts of radio waves much like flashes from a lighthouse. Radio astronomers both study inner workings of pulsars—over 1000 of which are now known—and use their ticking as a measuring device, for example, to make galactic maps.

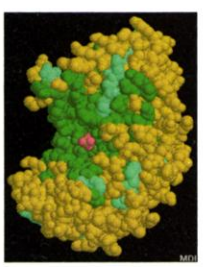
A site at the University of California, Santa Cruz,* offers an introduction on the history of pulsar studies. Other offerings include a database of references and a catalog of pulsar stats such as the year of discovery, mass, coordinates, and period of rotation. Also high in the bookmarks of experts is this German site,† home of the European Pulsar Network, where radio astronomers share their raw data; nonexperts may enjoy the pulsar animations if they can unzip them. Princeton's site‡ includes a space map of pulsars, software for analyzing emissions, and for students and other curious visitors, photos of a few radio telescopes such as the giant Arecibo dish in Puerto Rico. To hear actual pulsar radio signals, click on the sound bites at Princeton's site.

* pulsar.ucolick.org/cog
† www.mpifr-bonn.mpg.de/div/pulsar
‡ pulsar.princeton.edu

HOT PICKS

Protein safari. Biochemists and teachers will welcome the second release of Protein Explorer, a user-friendly software tool for viewing molecules on the Web. Among other new options, visitors can color an enzyme to indicate which amino acids haven't changed across evolution in, say, yeast compared to humans.

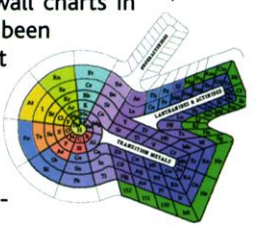
www.umass.edu/microbio/chime/explorer



Show me the data. The World Wide Web works great for text, graphics, sound, and even video, but many scientists would like a better way to share raw data sets. So data-mining experts are working on Data Space Transfer Protocol, a set of rules for creating a web of databases. Get the software for DSTP and check out a demo at www.dataspaceweb.net

Mountain view. The Tundra-Cam plops you smack in the middle of an ecological research site atop an 18,700-kilometer ridge in the Colorado Rockies. It's used by ecologists to track snowmelt, vegetation, and such, but Web-based controls let any surfer zoom in on a patch of alpine grass or gaze out across the Continental Divide. tundracam.colorado.edu

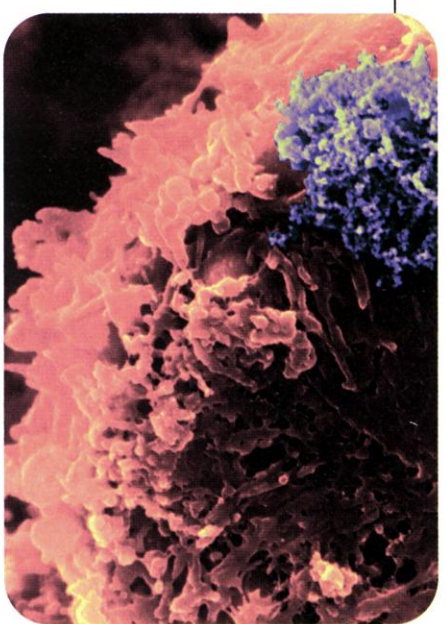
Period pieces. Mendeleev's 1870 rectangular arrangement of the elements by valence electrons still rules on wall charts in labs and classrooms, but various alternatives have been proposed. At the Pictorial Periodic Table, check out Stowe's physicist's version (which arranges elements by quantum levels on planes), Benfey's Spiral Periodic Table (where transition and inner transition metals form arms), and even a three-dimensional spinning table. Most tables are clickable and lead to info on each element.



chemlab.pc.maricopa.edu/periodic/periodic.html

IMAGES

Attack Mode



A viral particle (blue) gloms onto a human white blood cell in this scanning electron micrograph. The attacker is human T-lymphotropic virus (HTLV-1), a retrovirus that's common in some parts of the world and causes leukemia or other illness in 5% of carriers. It was caught in the act by microscopist Dennis Kunkel of the University of Hawaii, Manoa, and appears in The Big Picture Book of Viruses* —a collection of dozens of micrographs, models, and cartoons culled from various Web sites. You'll find cutaway diagrams of HIV, bumpy molecular models of herpesvirus, artfully colorized micrographs of rabies, and even the first fuzzy image ever taken in 1976 of Ebola virus (a sort of curvy Y shape). The book includes rap sheets on the outlaws, and links lead to more info on curator David Sander's main virology site.

* www.tulane.edu/~dmsander/Big_Virology/BVHomePage.html

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Science ONLINE

From the funding situation in Europe and the United States to job prospects in industrial labs around the world, Next Wave's September feature provides a comprehensive picture of careers in bioinformatics. Log in later this month for an online chat with bioinformatics guru David Botstein. nextwave.sciencemag.org/cgi/content/full/2000/08/23/1

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