



IMAGES

Come Fly With Me

Only a maniac would try to fly anywhere near the U.S. Capitol these days, but you can take a virtual flight over Washington, D.C.—or Miami Beach, or San Francisco—at TerraFly, a new site for viewing aerial photographs and satellite images. A project of the U.S. Geological Survey (USGS) and Florida International University, the site lets you type in a U.S. address and get a bird's-eye photo (in black and white) then pan across it, seamlessly moving onto adjacent images. A USGS spokesperson says that compared to TerraServer, a similar site, TerraFly will better satisfy scientists' needs because it includes coordinates and will eventually allow users to combine different types of images, including global Landsat 7 satellite data. Browsing images is free, but the site plans to charge for downloading.

www.terrafly.com

EDUCATION

The Stringy Cosmos

According to string theory, fundamental particles such as electrons and quarks are concealing something. They may actually be composed of unobservable, shimmying loops, or strings, the vibrations of which dictate the particle's character. If that sounds fantastic, drop by The Official String Theory Web Site for a cheeky tutorial on string theory, the framework that many physicists believe will allow them to tie down a unifying "theory of everything."



Written by a Caltech Ph.D., the tutorial explains strings at two levels of difficulty: advanced for the calculus-savvy and basic for those stymied by the first chap-

ter of Stephen Hawking's *A Brief History of Time*. In the introduction, you'll learn how these quivering filaments may reconcile the seemingly irreconcilable theories of quantum mechanics and general relativity and why we can't detect them even with mammoth particle accelerators (strings are too small). Other sections explain how string theory ties in with cosmology and black holes. To learn more from the experts themselves, try the audio files of interviews with string savants such as Brian Greene of Columbia University, who's billed as "string theory's answer to John Cusack."

www.superstringtheory.com

DATABASE

Taxonomists' Companion

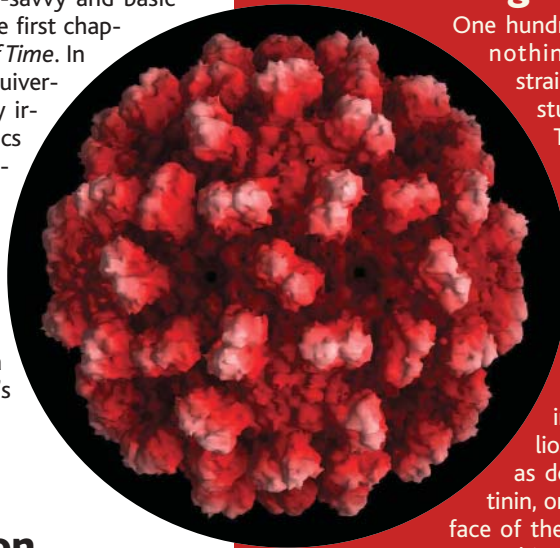
Though it's only one-tenth complete, the World Biodiversity Database already boasts entries for some 200,000 species of plants, fungi, animals, bacteria, and protists. Compiled by the Amsterdam-based Expert Center for Taxonomic Identification, the database draws from 39 taxonomic surveys and projects on groups such as marine mammals, sea cucumbers, and the orchids of New Guinea.

Look up sperm whale (*Physeter macrocephalus*), for instance, and you get a page with drawings of the animal and details on its distribution (tropics to ice pack), appearance (can grow to 18 meters), classification, and behavior (may dive to 3200 meters in pursuit of squid). Entries also link to protein and DNA databases. Besides searching by scientific or common name, you can browse the tree of life to track down interesting creatures. Marine organisms predominate, but keep checking back—according to its creators, the database will eventually include all 1.7 million known organisms on Earth.

www.eti.uva.nl/Database/WBD.html

EXHIBITS

Making Sense of Viruses



One hundred years ago, scientists knew next to nothing about viruses, whether killer flu strains or the less fearsome tomato bushy stunt virus (left), a scourge of the garden. Today we can snap their mugshots, take them apart like old cars, and reengineer their components to make more effective vaccines or tools for molecular biology.

Learn how the field advanced so far, so fast at *Viruses: From Structure to Biology*, which tracks the evolution of structural virology from the first crystallization of tobacco mosaic virus in 1935 to modern efforts to banish polio. Six chapters relate key milestones, such as deciphering the structure of hemagglutinin, one of the proteins jutting from the surface of the influenza virus. And in 11 interviews, you can read in their own words the stories of pioneers such as Stephen Harrison, who in 1978 was the first to determine the atomic structure of a virus using x-ray diffraction. Molecular biologist and site editor Sondra Schlesinger of Washington University in St. Louis hopes the history will help future virologists appreciate the difficulties faced by lab researchers just a few decades ago. "It's amazing for [students] to see how hard it was to do this work."

medicine.wustl.edu/~virology/index.htm

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