



Marvel at the photos of Mars. View the interior of a human body. Join a cyberstudy. Tour a virtual dinosaur zoo.

How? By joining the SCIENCE NEWS guided tour of the World Wide Web. Whether you are a tenderfoot or a seasoned explorer, you'll enjoy visiting a few of the writers' favorites among the many informative, unusual, and entertaining Web sites of science.

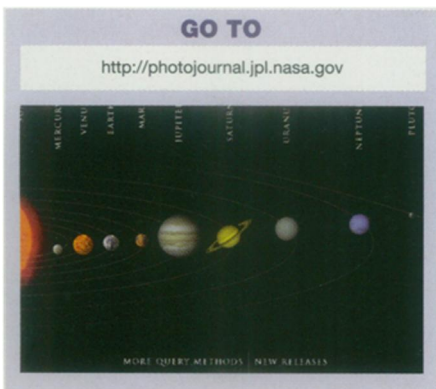
All it takes is a computer with Internet access. If you don't have your own, you can probably find one at a public library. Or you can stop by one of the cybercafes that are popping up in urban areas around the country and sip a steaming cup of java as you see the sights.

Hold onto your mouse, here we go!

GO TO

<http://www.jsc.nasa.gov/sa/sd/intro/humans.html>

The first stop on the tour is NASA's Humans in Space site. Designed to prepare visitors for the rigors of space travel, this site may give you a start. The good news is that microgravity allows you to turn somersaults in midair or lift a 300-pound weight with a pinkie. If you're ready for adventure, continue on to the next Web site.



Next stop: Mars. At NASA's Planetary Photojournal Web site, you can take a quick jaunt to the Red Planet. Click on Mars to see the startling images of the Martian surface taken during the recent

Pathfinder Mission. Take a look at Cabbage Patch, an area studded with small rounded objects that may have been left behind by a Martian flood. Don't forget to visit Twin Peaks or Poohbear Rock, attractions that have influenced scientists' view of ancient Mars' weather.

After you've flipped through the snapshots of Mars, gaze at the icy moons of Saturn taken during the Voyager mission or pull over for a vista of the solar system.

Along with inspiring pictures, NASA's Web site is a trove of detailed scientific information collected during a variety of space missions.

GO TO

<http://www.ucmp.berkeley.edu>

Now take off your space suit and head to Earth for an online tour back in time, courtesy of the University of California Museum of Paleontology. Time travelers can click on dinosaur tracks to learn about Earth and the creatures that inhabited it millions of years ago.

Intrepid souls who thrilled to the story of *Jurassic Park* should check out the dinosaur pages on this site. Here you can meet giant herbivores, meat-eating dinosaurs, and the small-but-mean *Velociraptor*. Take a guided tour of an exhibit on the *Dilophosaurus* (one of the stars of *Jurassic*

Park) with Sam Welles, who helped discover the first *Dilophosaurus* skeleton. Welles offers a fascinating description of this powerful reptile, which probably traveled in small herds.

This site contains other virtual museum exhibits, including one on elephants, another on plate tectonics, and a gallery of fossil images.

GO TO

<http://www.chemcenter.org>

Fast-forward to present-day Earth for a tour of ChemCenter, a site sponsored by the American Chemical Society. Head for National Chemistry Week to find out how to become a chemist for a day. Scientists are recruiting volunteers to collect and test natural water samples across the United States for hardness. As the data come in, this site will report on the results.

Need some chemical humor? The society has compiled a list of jokes sent in by Web surfers. Have you heard the one about the two atoms?

GO TO

<http://mwanal.lanl.gov/CST/imagemap/periodic/periodic.html>

If you want to learn more about argon, lead, and the other elements, go to the online Periodic Table of the Elements, a site hosted by the Los Alamos National Laboratory. Click on any element in the table to get an array of information about its history, properties, and uses. For example, here you'll learn that sodium is the fourth most abundant element on Earth.

GO TO

<http://volcanoes.usgs.gov>

For more travel adventure, peer over the rim of a virtual volcano designed by the U.S. Geological Survey Volcano Haz-

Accuracy on the Web

Much has been written about the accuracy of information on the World Wide Web. Random surfing will bring lots of junk to your computer screen, but you can target your search to reputable sources.

Pay attention to the domain section of a Web site address. A site name that ends in .com indicates a commercial business; the data there may be accurate, but you can expect a sales pitch. The ending .org represents a nonprofit group, .edu goes to educational institutions such as universities, and .gov indicates a site put up by a government agency. Like any other research effort, surfing the Web requires you to check your sources carefully. —K.F.

GO TO

<http://www.sciencenews.org>

SCIENCE NEWS ONLINE



This week in SCIENCE NEWS

- Headlines
- Selected Full-Text Articles
- References and People to Contact

Review the Top SCIENCE NEWS Stories of 1997

Previous Issues of SCIENCE NEWS

Features

- Math Trek
- Food for Thought
- TimeLine



Listing of Full-Text Articles Available Online

Feedback

Subscribe

As you roam the World Wide Web, linger for a while at the SCIENCE NEWS ONLINE base camp. Every week, it offers fresh provisions of news and features to keep you on top of scientific developments. You'll be welcomed by the rainbow logo, a miniature of the week's cover, and a menu.

Neither snow, nor rain, nor heat, nor gloom of night can keep the headlines of each week's SCIENCE NEWS articles from your computer screen. A click on Headlines will call up one-sentence summaries of each story.

If these hors d'oeuvres won't hold you until the issue arrives, each Saturday serves up the full text of several articles selected to appeal to Web travelers. For those with a hearty appetite, consult the list of References and People to Contact to learn more about a specific story. It features addresses of sources quoted in SCIENCE NEWS stories and full bibliographic information on publications mentioned, as well as useful background material. Hungry for even more? Click on Previous Issues.

Each week, SCIENCE NEWS ONLINE features three special treats not included in the magazine. In MathTrek (originally called MathLand), Ivars Peterson offers a lively explanation of some aspect of mathematics and its everyday uses—for example, what statistics can tell you about the pattern of wins and losses in a tennis match.

Food for Thought, by Janet Raloff, presents tasty developments in nutrition and food science. It's the only place on the Web to get both research results and recipes for sea lamprey. TimeLine uses past issues of SCIENCE NEWS as a time capsule: Take a look at the hot science news and photos from 70 years ago.

SCIENCE NEWS ONLINE provides for several other needs. Search the archives for selected full-text articles and online features. Send messages to SCIENCE NEWS, as personal as your reactions to the articles published or as matter-of-fact as an address change. Enter subscriptions for yourself or others, and buy books from the regularly updated selection of Science News Books. Visit a year-end highlight of the magazine—Science News of the Year. This annual review of the top stories in science is available year-round on the Web.

To ease you back into your journey through cyberspace, SCIENCE NEWS ONLINE includes links to Web sites that SCIENCE NEWS writers have found particularly useful or entertaining, including those mentioned in this article.

Away you go!

—J. Miller

ards Program. This site includes detailed information about the hazards posed by volcanoes and reports on volcanic unrest around the world. It includes dramatic volcano footage, including a picture of a spatter cone, a steep hill of welded lava erupting on the Big Island of Hawaii. Don't get dizzy as you look down into the Aniakchak caldera in Alaska—and watch out for the mud volcano!

GO TO

<http://www.goes.noaa.gov>

For an unparalleled view of forest fires and other natural disasters, head for the Geostationary Satellite site run by the National Oceanic and Atmospheric Administration. It has data on cloud and surface conditions collected by satellites orbiting Earth. You can look at a satellite image of the forest fires in Brazil, showing fire, smoke, and clouds, as well as shots of forest fires in Indonesia. A film shows the Soufrière Hills volcano erupting on the island of Montserrat.

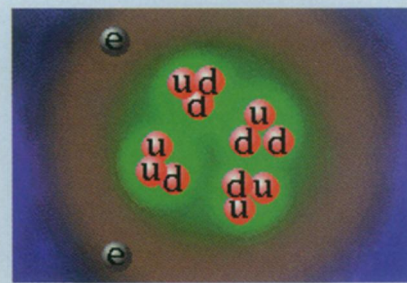
GO TO

<http://nic.fb4.noaa.gov>

The latest data on El Niño, the occasional warming of Pacific Ocean waters, are also available from the National Oceanic and Atmospheric Administration. Scientists at the agency have compiled detailed information on this weather pattern, as well as practical information on its effects on local weather conditions. For example, Californians visiting the site will learn that they can expect to don rain gear this winter. Color-coded maps of the United States show El Niño's predicted effects through next April.

GO TO

<http://pdg.lbl.gov>



For a trip to the subatomic world, visit the Lawrence Berkeley National Laboratory Particle Data Group's site. Here, you can embark on the Particle Adventure. Learn about the inner workings of atoms, including a strange family of particles called quarks, which have names like up, down, and charm. If this introduction to physics sounds like a Dr. Seuss book, read on. During the adventure, you'll meet leptons and the elusive neutrinos.

GO TO

<http://www.utm.edu/research/primes>

Math buffs will enjoy the Prime Page, a site devoted entirely to—you guessed it—prime numbers. Run by mathematician Chris K. Caldwell at the University of Tennessee at Martin, the site defines prime numbers and gives information on the largest known primes. It also includes a section on how to find primes and prove primality. For those wondering when the first million-digit megaprime number will be found, this page makes predictions. It also lists the 10 largest prime numbers identified so far.

GO TO

<http://www-groups.dcs.st-and.ac.uk:80/~history>

For the personal side of mathematics, visit a Web site sponsored by the University of St. Andrews in Fife, Scotland. With more than 1,000 biographies of famous mathematicians, this site includes both math facts and a fascinating glimpse of history. The site also carries articles on the development of mathematical ideas. You can peruse such topics as pi through the ages, prime numbers, Egyptian mathematics, and the quantum age.

GO TO

<http://www.reef.edu.au>



Don your diving gear for a trip to an ocean reef. Developed by the University of Sydney, this site tells you all about the reef crest, the mangrove swamp, and the lagoon. You can take a virtual swim with a shark and learn all about this ancient group of predators, including the gory details of what they eat. Or ask a brain coral about sex in the sea—this site provides a scintillating glimpse of the reproductive habits of sea creatures.

GO TO

<http://commtechlab.msu.edu/sites/dlc-me/zoo>

Hop onto the shuttle bus for the Microbe Zoo, a site developed by the Communication Technology Laboratory at Michigan State University. Once you reach the home page, click on Dirtland to learn about tiny organisms that live in

soil and rocks. This section includes the House of Horrors, which describes the life of a vampire bacterium or a strangler fungus. Move on to Home Sweet Home to find out what lives on the surface of your kitchen cutting board. Next, stop at the Animal Pavilion, where you'll learn that cows digest grass and hay with the help of billions of bacteria, fungi, and viruses.

GO TO

<http://www.hhmi.org/GeneticTrail/>

To catch up on the fast-paced field of genetics, tap into the Howard Hughes Medical Institute's Web site. Blazing a Genetic Trail serves as an easy-to-understand guide to modern genetics research and its practical applications.

GO TO

<http://www1.omi.tulane.edu/ecme>

Participate in a virtual scientific symposium at a Web site sponsored by the Center for Bioenvironmental Research of Tulane and Xavier Universities in New Orleans. At Environmental Concepts Made Easy, you can take in the highlights of a recent scientific meeting on lead in the environment. The site also offers detailed information on environmental estrogens and other synthetic chemicals in the environment. Don't forget to stop in at the Tulane Astrobiology Center, where researchers use space travel to study basic biological phenomena.

GO TO

<http://thomas.loc.gov>

Policy junkies can take a quick trip to the nation's capital at Thomas Legislative Information on the Internet. You can search for a specific bill or troll for legislation on a variety of topics. A search for the word "ozone," for example, turns up 30 items, including a bill to amend the Clean Air Act. If you want to brush up on the legislative process, visit the section that explains how laws are made. This site also contains historical documents, including the Declaration of Independence and the Constitution.

GO TO

<http://www.healthfinder.gov>

The ultimate Web site for access to consumer-oriented medical information is the U.S. Department of Health and Human Services' Healthfinder. It includes information on diseases from A to Z with links to more than 1,250 other reliable sites. If you're looking for help with heart disease, for example, the tour provides clear explanations of the warning signs and a section on how to ward off this killer.

Armed with the basics, you can then venture farther afield to a variety of other sites. (The American Heart Association site has a feature that lets you calculate your risk of developing heart disease.)

GO TO

<http://www.nih.gov/health>

The Health Information Page provides one-stop access to information from the National Institutes of Health. Here you can link to Medline, a database run by the National Library of Medicine which has more than 8.8 million references to articles published in medical journals around the world. Check out the National Cancer Institute or the Office of AIDS Research. The National Library of Medicine's images from the history of medicine include portraits, caricatures, and graphic art. Don't leave this site without stopping at the Visible Human Project—digitized images of the human body.

GO TO

<http://www.shapeup.org>

At Shapeup America's site, you can calculate your body mass index, which researchers consider a better predictor of disease risk than body weight alone. After you've gotten the bad (or good) news, jog down to the Health and Fitness Center, where you can design your own exercise program. Then stop off at the Cyberkitchen to design an appetizing meal that helps you lose, gain, or maintain your weight.

GO TO

<http://medinfo.wustl.edu/~ysp/MSN>

If you're the sort of traveler who has a lot of questions, turn to Washington University's Mad Scientist Network for answers. You can ask scientists about chemistry, physics, astronomy, engineering, earth science, and biology. This site also includes links to other science sites and resources on the Internet.

GO TO

<http://whyfiles.news.wisc.edu>

For the inside scoop on any story in the news, try the Why? files, sponsored by the University of Wisconsin. This site provides the detailed science behind the stories that everyone is talking about.

Do you have an opinion of your own? Contribute to the Scientific Opinion Corner or join a discussion group on astronomy, geology, physics and math, or plants, animals, and people.

That concludes the tour. See you on the byways of the Internet. □