

## RESOURCES

## Fish Stories

With their ferocious dinosaurs and mass extinctions, the Jurassic and the Cretaceous periods attract plenty of attention. But there's a lot to like about the earlier, lesser known Devonian period. The "Age of Fishes" saw major changes in aquatic animals, including the evolution of lobe-finned and ray-finned fishes and the definitive emergence of sharks. To bone up on this epoch, which spanned from 410 million to 356 million years ago, check out Devonian Times.

Webmaster Dennis Murphy, a computer exhibit designer in Pennsylvania, began the newspaperlike site in 1997 with support from researchers at the Academy of Natural Sciences in Philadelphia. Visitors will find basic background on the plants, animals, and geology of the period. And for Devonian diehards, there is a Who's Who of fossil organisms from Red Hill, an important Devonian site in Pennsylvania. A new section describes a humerus found there (*Science*, 2 April 2004, p. 90). Paleontologists believe the arm bone belonged to a limbed fish that may have led the procession of animals transitioning from life in the sea to walking on the ground. Above, Murphy's take on the discovery. >> [www.devoniantimes.org](http://www.devoniantimes.org)



## SOUNDS

## &lt;&lt; In Tune With the Animals

Wondering what a zebra or a silkworm sounds like? Check out Listen to Nature, which holds 400 samples from the British Library's vast sound collection. Hear clips including a yipping Arctic fox, the chirps of a Namibian sand gecko, and the dawn chorus of creatures in an Australian rainforest.

In The Language of Birds, the site's creators have scattered bird recordings within a review article packed with facts about bird communication. You can listen to a marsh warbler, which steals from other

birds' songs, or Alex, an African gray parrot who can reportedly identify colors and objects. Above, a sedge warbler, which stops singing when it finds a mate. >> [www.bl.uk/listentonature](http://www.bl.uk/listentonature)

## EDUCATION

## Professor's Assistant

If you're a physicist or astronomer who's rounding up Web materials for a course, save some time by visiting ComPADRE. This hub for physics and astronomy teaching resources leads to a half-dozen subsites stocked with growing collections of links reviewed by experts. For instance, a search on "black holes" at The Astronomy Center produced 24 hits, including animations and a cosmology primer. The project's sponsors include the American Institute of Physics, the American Astronomical Society, and the American Association of Physics Teachers. >> [www.compadre.org](http://www.compadre.org)

## DATABASE

## Satellite Tally

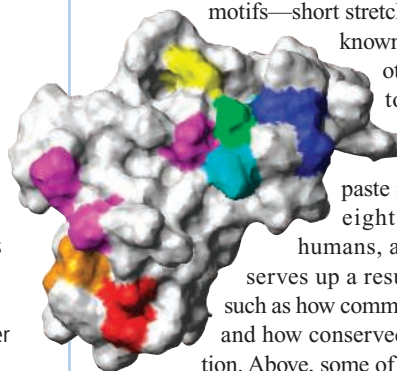
Need a complete list of the satellites hovering above Earth? The Union of Concerned Scientists' global security section has toted up all 800 or so active satellites and posted the information as an Excel spreadsheet. Twenty-one data fields include altitude, launch date, manufacturer, and whether the craft is up there for military or civilian purposes. The data show that the United States has the most satellites, followed by Russia and China. >>

[www.ucusa.org/satellite\\_database](http://www.ucusa.org/satellite_database)

## TOOLS

## Matchmaker

Biologists puzzling over the role of a protein can get help at Minimotif Miner, created by Sanguthevar Rajasekaran, Martin Schiller, and others at the University of Connecticut, Storrs. The new site searches your protein for hundreds of motifs—short stretches of amino acids—that are



known to perform specific roles in other proteins, such as binding to or modifying other molecules. Enter the ReqSeq number for your protein or paste in its sequence, choose from eight species (including yeast, humans, and fruit flies), and the site serves up a results page that includes data such as how common the motif is in that species and how conserved it has been through evolution. Above, some of the 39 motifs that Minimotif Miner found in the human prion protein, including two motifs that overlap with mutations (yellow, green) that lead to Creutzfeldt-Jakob disease. >> [mnm.engr.uconn.edu](http://mnm.engr.uconn.edu)

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