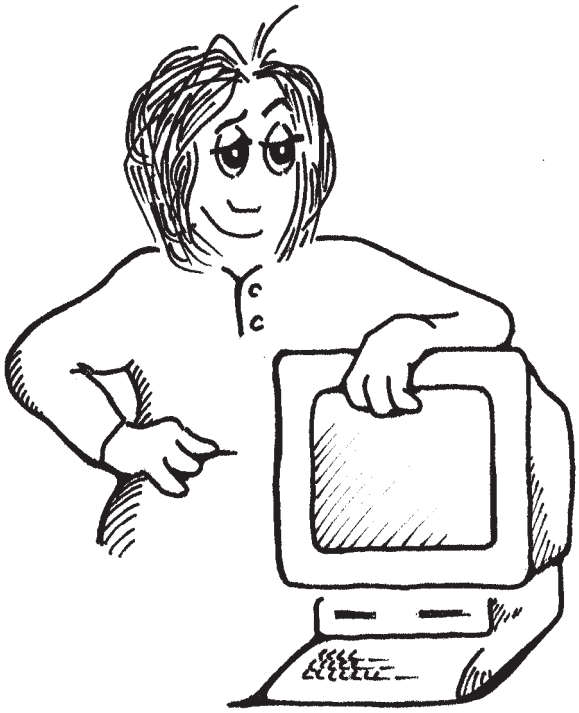
Science on the Web

Web Activities Using Scientific Data



Barbara Poppe
Space Environment Center
NOAA

Dr. Deborah McAllister
and Lisa Richardson
University of Tennessee, Chattanooga

May 1998

Space
Environment
Center

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

To the Explorer

This Web product is a rework of the publication *Internet Activities Using Scientific Data*, by Stan Froseth and Barbara Poppe. That booklet is still in print and available to those who need to learn the UNIX-based Internet tools (ftp, gopher, telnet, talk, finger, etc.)

In this new product, all the tools are Web–browser based. Some of the exercises with data have changed so that we could use some of the wonderful Web pages out there.

Acknowledgments

Rob Wells provided the cartoons that brought “life” to Jane and Sandy. Barbara Poppe was forced to contribute the mice.

Barbara Poppe
Space Environment Center
325 Broadway, Boulder, CO 80303
(303) 497–3992
bpoppe@sec.noaa.gov

Science on the Web

Introduction

The World Wide Web (WWW or "the Web") is a network of computers that exchange information stored in particular formats. And since much scientific data is now available on the Web, online information can be used for school projects and reports. Of course, there are many interesting things on the Internet, and all are available to you if you have the access, the tools, and the knowledge to locate the information.

The Internet is a global network of computers. According to Provenzo (1998, p. 6), the Internet is "a loosely configured system that connects millions of computers around the world." During the past 5 years, there has been an information explosion on the Internet, especially through home pages on the World Wide Web. Who knows what the next 5 years will bring?

This guide is intended to teach you how to use special software tools for the Web. It makes use of the scientific data produced by NOAA and other government agencies. Please make note that things are changing daily on the Web, and locations and sources can vary without notice, though many will specify a link to a new location. (Software is available on the market to do this for you automatically.) The tools, however, are expected to allow all the functions described within this guide. The purpose of this guide is really to empower you to explore the Web on your own. Once you have achieved independence, no amount of change in the Internet over the years will deter you.

There are several Web browsers available and generally free for educational use. The most common can be downloaded from the following URLs:

Netscape Navigator — **http://home.netscape.com/download/index.html**

Microsoft Internet Explorer — **http://www.microsoft.com/ie/download**

Mosaic — **http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/NCSAMosaicHome.html**

Web-based tutorials can assist you, online, in learning about how to use the various Web tools. You might want to view the following Web page for assistance with Netscape

Doak, E. D. (1996). Tennessee TelTrain (T3) for World Wide Web (W3) with Netscape [Online]. Available: **http://web.utk.edu/~teltrain/**

Provenzo, E. F., Jr. (1998). The educator's brief guide to the Internet and the World Wide Web. Larchmont, NY: Eye on Education.

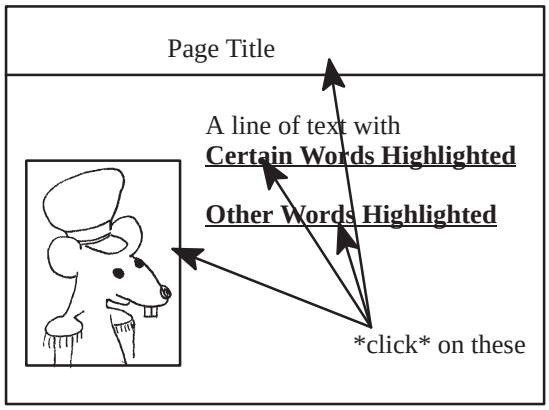
URLs are addresses and they take this form:

http://www.ngdc.noaa.gov/dmsp/ols–app–city.html

http://	is the service type
www.ngdc.noaa.gov	is the host (computer)
/dmsp/source/archive.html	is the path and file name

The initials **www** often appear in names of addresses, indicating that they are part of this World Wide Web system.

Hyperlinking

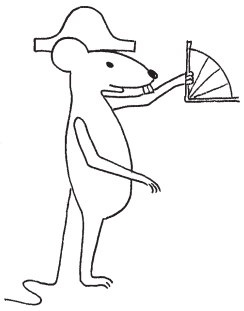


Hyperlinked documents have "hot spots" that are either words or pictures. When you click on a hot spot, other information or programs are called and you will see a new set of information. These are basically links to other documents.

By convention, if there are links in text, the text will be color, bold, or underlined to indicate that there are links available. Pictures are sometimes linked, so click on any of them and see what happens.

The top level page of a Web site is often called a "home page." Try using the **Back** button on your browser, or the Home link on the Web page

Navigating



*You'll probably find that you get lost a lot using **Netscape**. That's half the fun! But it's also nice to be able to get back quickly to an interesting place. Use the **Bookmarks** menu item to save the address of good spots.*

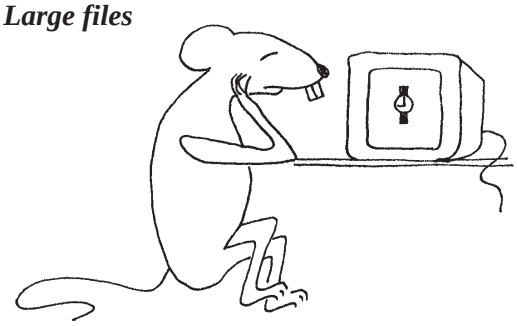
Later, you can get back using the Bookmarks menu item. Just select the Web destination that you saved.

Types of URLs

You can specify several service types:

http://	hypertext
ftp:// or **file://**	ftp
gopher://	gopher
telnet://	telnet

Large files



File size is significant if you are using a dial-up connection. Modem speeds make all the difference. How fast a transfer happens depends on the speed of your connection and the traffic on the Net.

Images require a lot *of capacity to send over the Net. That's why it often takes a long time to load a new page. You can use less of the Net's resources by turning off the images using the Options menu.*

Conventions

Before you get started, please take note of the following conventions used in this guide:

- ★ The names of URLs and links are printed in **boldface**.
- ★ Navigation will be by links, and they are underlined.
  A list of links means to *click* on each link in turn as you go through the menus.

NOAA's (and other) Data

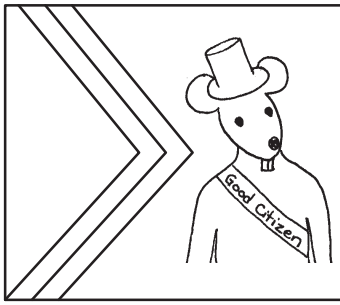
An important part of the mission of NOAA (National Oceanic and Atmospheric Administration, part of the Department of Commerce) is to describe, monitor, and predict changes in the Earth's environment. This involves making physical measurements, and also storing, interpreting, and disseminating the resulting data. NOAA uses the Internet to let people know what data sets are available and how they can be obtained. NOAA provides data in many different formats including printed pages, computer tapes, CD-ROM, and online. Here, we are primarily dealing with the online format: data that you can get directly into your computer via the Internet. The data available include the following:

NOAA's central Internet locator is **http://www.noaa.gov**. From this location on the World Wide Web, you can access all of NOAA's online data.

In addition, NOAA's data are used by many other organizations. For example, Michigan State University has taken satellite images and made them into weather movies. These are updated every three hours, and are available on the Internet.

Also referenced in this guide are data from the U.S. Geological Survey (USGS), the National Aeronautics and Space Administration (NASA), the National Center for Atmospheric Research (NCAR), and several universities. The extent of the total resources available on the Internet is truly unimaginable. These resources are at your fingertips once you learn the basic Web tools.

Files refered to as **pdf** files require Adobe Acrobat Reader. This reader is available for free from **http://www.adobe.com/prodindex/acrobat/readstep.html**



Netiquette

Whenever you are downloading from the Net, you open up your system to illegal software called viruses. Take precautions to protect your system. And when you've been infected and need to take the time to fix your system, consider how destructive and time-wasting this criminal type of hacking is.

Interesting Sites

Try a few of these sites for some interesting browsing.

Space Environment Center	http://www.sec.noaa.gov
National Oceanic and Atmospheric Administration (NOAA) home page	http://www.noaa.gov
NASA Home Page	http://www.nasa.gov
JASON Electronic Field Trips	http://seawifs.gsfc.nasa.gov/scripts/JASON.html
NASA Spacelink	http://spacelink.nasa.gov
The Observatorium	http://observe.ivv.nasa.gov/observe.html
Questacon—National Science and Technology Centre, Australia	htttp://sunsite.anu.edu.au/Questacon
The Math Forum	http://forum.swarthmore.edu
Cornell Theory Center Math and Science Gateway	http://www.tc.cornell.edu/Edu/MathSciGateway
VolcanoWorld	http://volcano.und.nodak.edu
U.S. Geological Survey Hydroclimatology of San Francisco Bay	http://s101cascr.wr.usgs.gov/~mddettin
University of Arizona Students for the Exploration and Development of Space	http://seds.lpl.arizona.edu
The Exploratorium (San Francisco)	http://www.exploratorium.edu
U.S. House of Representatives	http://www.house.gov
U.S. Senate	http://www.senate.gov
U.S. Library of Congress	http://www.lcweb.loc.gov
Annenberg Science and Math Initiatives	http://www.c3.lanl.gov/~jspeck/SAMI–home.html
GLOBE Program (Global Learning and Observations to Benefit the Environment)	http://www.globe.gov
Monterey Bay Aquarium	http://www.usw.nps.navy.mil
Boulder (Colorado) Community Network	telnet:// or http://bcn.boulder.co.us
Cleveland Free-Net (with access to other community networks)	http://cnswww.cns.cwru.edu/net/easy/fn
Education Library	http://www.csu.edu.au/education/library.html