



National Aeronautics and
Space Administration

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, California

Earth Science Educational and Informational Products

Available from NASA's Jet Propulsion Laboratory

Overview

Although Earth is our home, we still have much to discover about it. At NASA's Jet Propulsion Laboratory, we are using a myriad of scientific instruments to study the land, atmosphere, and ocean of our changing planet.

Visit Earth at: <http://www.jpl.nasa.gov/earth>

JPL offers many products and programs that are valuable resources for teaching and learning about Earth and Earth resources. Products are available electronically through the Internet and/or on physical media, including CD-ROM, videocassette, and printed materials. Programs include interactive on-line activities and even classroom participation in mission activities. These hands-on programs are learning and skill-building assets for enriching the educational environment and enhancing student interest in the Earth sciences.

The materials listed are available without charge unless otherwise noted. The symbol at the beginning of each product or program identifies the medium on which it is available.

LEGEND



Electronic Availability



Videocassette



CD-ROM



Interactive On-Line
Activity



Printed Materials
(lesson plans, pamphlets,
posters, etc.)

ATMOSPHERE



Atmospheric Infrared Sounder: Weather and Climate Studies

Education Web Pages — An on-line site discusses the role of clouds in weather, climate, and the water cycle and how we will observe them with the Atmospheric Infrared Sounder. Activities and images are included.

<http://www-airns.jpl.nasa.gov/education.html>

LAND



Shuttle Radar Topography Mission (SRTM)

SRTM Web Site — The education component of the SRTM Web site contains links to student activities and to Earth Science education sites.

<http://www-radar.jpl.nasa.gov/srtm/education.html>



Spaceborne Imaging Radar-C (SIR-C)

Educational CD-ROM — Contains worldwide radar images taken during the SIR-C missions flown in 1994 on Space Shuttle Endeavour. Preflight images are also included. The CD-ROM contains lesson plans, presentation materials, and a teacher's guide. It can be used as part of Earth science, computing, or geography curricula for junior high, high school, and university levels. The CD-ROM is formatted for UNIX, Macintosh, and PC platforms. A nominal fee will be assessed. For system requirements and ordering information, see the Web site below, or contact the U.S. Geological Survey Earth Resources Observation Systems (EROS) Data Center:

<http://edcwww.cr.usgs.gov/landdaac/sir-c/educational.html>

E-mail edc@eos.nasa.gov

Phone (605) 594-6116

Fax (605) 594-6963



Radar Imaging

SIR-C Education Web Site — Visit the SIR-C Education Program Virtual Classroom. The site contains radar images, videos, slide sets, and reference material, and is designed for students and educators.

<http://southport.jpl.nasa.gov/education/classroom>

OCEAN



The products marked with an asterisk (*) are available from the JPL Physical Oceanography Distributed Active Archive Center (PODAAC).

<http://podaac.jpl.nasa.gov>

E-mail podaac@podaac.jpl.nasa.gov

Oceanography and Earth Science

Education Web Pages — For oceanography and Earth science educators; includes a 40-page document of resources (also available in hard copy). Information is appropriate for elementary grades through college.

<http://podaac.jpl.nasa.gov>



Studying Oceans from Space

Education Web Pages — El Niño and La Niña, ocean circulation, sea-level rise; contains a wide range of material: ask-a-scientist, ocean satellite facts, data tutorials, and a buoy-tracking map.

<http://topex-www.jpl.nasa.gov>



Ocean Winds and Scatterometry

Education Web Site — Ocean winds site being designed to provide student activities for use with scatterometer data. It will be available Summer 1999.

<http://winds.jpl.nasa.gov>



Ocean Remote Sensing

*Teacher Package for Physical Ocean Remote Sensing — Contains a poster and a selection of brochures and lithographs that provide information associated with El Niño and La Niña, sea-surface height, ocean circulation, and ocean winds. In general, the material is written for a grade 8 level and the general public. Materials in this packet vary over time. It can be ordered on line starting February 1999 through:

<http://topex-www.jpl.nasa.gov>

E-mail topex@jpl.nasa.gov

Phone (818) 354-0151



Our Ocean Planet

**View to an Ocean Planet* — A “Year Of The Ocean” (YOTO) CD-ROM, an exciting informative resource for students (grade 8) and teachers. It follows accepted science teaching themes and features background material and classroom activities, including units on “Climate,” “Oceanography,” and “Life in Our Oceans,” a self-guided tour of the 1997–1998 El Niño event, an Earth-orbiting satellite knowledge game, an interactive Gulf of Mexico cruise-planning expedition, a unit on oceanographers and their work, and information about satellite altimetry.



El Niño

The Rise and Fall of the 1997–1998 El Niño — Designed for grade 8 students and the general public, this folded poster is available either by itself or as part of the educator’s package. The El Niño cycle is shown as a series of seven easy-to-understand oceanography images on the front, and information and classroom activities are provided on the back. The version that comes through the on-line service is folded for easy handling. If you want a rolled version on a heavier stock for long-term display or framing, please contact the e-mail address below. The poster can be viewed and ordered on line at:

<http://topex-www.jpl.nasa.gov/education/el-nino-poster.html>

E-mail topex@jpl.nasa.gov



QuikSCAT: Measuring Winds from Space

**Catch the Wind* — A video and teacher’s guide based on the story of the QuikSCAT scatterometer mission. In the 30-minute video, students will see real-life scientific and engineering problem-solving, set against the backdrop of building and launching a satellite that will significantly improve humankind’s ability to understand and predict weather and climate changes. Pre-viewing and post-viewing activities included in the accompanying teacher’s guide present opportunities for students to explore various science curricula. Will be available Summer 1999 and can be ordered on line through:

<http://winds.jpl.nasa.gov>

E-mail scatter@jpl.nasa.gov



The Study of Earth’s Weather and Climate from Space

**The WorldWinds* — This CD-ROM is a science curriculum resource with a focus on grades 6–9. Teachers of other grade levels will find the information and many of the student activities easy to tailor to fit their curricula. The science information has been aligned to the national science standards. The CD-ROM includes movies, animations, and pictures meant to be shown to students via computer, video screens, or projection screens, and contains over 40 classroom activities. Background information on the history of scatterometry and current missions at JPL are included. A Teacher’s Guide, incorporated in the CD-ROM, includes directions for use, specific content areas,

and sample lesson plans. *The WorldWinds* CD-ROM will be available Summer 1999 and can be ordered on line through:

<http://winds.jpl.nasa.gov>

E-mail scatter@jpl.nasa.gov



Spaceborne Altimetry

Additional Specialized Materials — Consists of videotapes and documents detailing a wide range of science results and the technical engineering aspects of spaceborne altimeters. For information about more specialized, in-depth materials available to support senior projects or in-depth units on physical oceanography, please contact:

<http://topex-www.jpl.nasa.gov>

E-mail topex@jpl.nasa.gov

Phone (818) 354-0151

MATH & SCIENCE



Practical Uses of Math And Science (PUMAS [poo'mas])

The "On-Line Journal of Math and Science Examples for Pre-College Education," PUMAS is a collection of one-page examples of how math and science topics taught in K-12 classes can be used in interesting settings, including everyday life. The examples are written primarily by scientists and engineers. All submissions are peer-reviewed by at least one scientist with a relevant background, and at least one teacher at an appropriate grade level. Once accepted, examples are available to teachers, students, and other interested parties via the PUMAS Web site. Our goal is to capture, for the benefit of pre-college education, the flavor of the vast experience that working scientists have with interesting and practical uses of math and science. Interested in participating? We need teachers at all grade levels, scientists, and engineers to volunteer for the pool of PUMAS reviewers. And we are always looking for good examples of the Practical Uses of Math And Science.

<http://pumas.jpl.nasa.gov>

ADDITIONAL RESOURCES

Distributed Active Archive Centers (DAAC)

Educational products are also distributed through a network of cooperating data centers located across the United States. Known as Distributed Active Archive Centers, they are operated for the NASA Earth Observing System Data and Information System (EOSDIS) and focus on specific Earth science disciplines. For a list of their educational products, see:

http://ivanova.gsfc.nasa.gov/daac/fliers/ed_fl.html

E-mail podaac@podaac.jpl.nasa.gov

Phone (818) 354-9890

Fax (818) 393-2718

Or write to:

JPL DAAC User Services

Jet Propulsion Laboratory, MS 300-320

4800 Oak Grove Drive

Pasadena, CA 91109-8099



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