



# EOS Data Analysis in the Classroom

## A Candidate 2003 NASA Academy Group Project

### Project Description:

We propose to make available Earth Observing System (EOS) satellite remote sensing data for classroom use dovetailed with particular learning goals at the middle school level and above (grades 8-12). We propose a "three-legged stool" model for lesson development that brings together Educators, Earth scientists, and Web content development specialists. At the end of this proposed activity, we will have developed a suite of Web-based lessons, hosted within NASA's Earth Observatory (<http://earthobservatory.nasa.gov>), making use of the new Image Composite Editor (ICE) software tool (<http://earthobservatory.nasa.gov>). In short, ICE is a tool programmed in Java that allows users to probe and manipulate image data via their Web browser. (A sample lesson is available in the EO already, focused on MODIS ocean measurements around the California Channel Islands. This was developed in collaboration with the Jason Project.



### Possible Development Initiatives:

- The Basics of the EM Spectrum** - A series of interactive lessons using ICE to help students learn which wavelengths of electromagnetic energy are most advantageous for examining aspects of the Earth's environment.
- **Investigating Aerosols** - A series of Web-based lessons designed to extend the basic understanding students get from the lesson under development at [http://earthobservatory.nasa.gov/Laboratory/Aerosol/aerosol\\_intro.html](http://earthobservatory.nasa.gov/Laboratory/Aerosol/aerosol_intro.html).
- **Calculating Climate Anomalies** - These lessons take advantage of the ICE tool's math mode. By comparing long-term averages to current data, students will be able to calculate drought patterns, rainfall anomalies, El Nino / La Nina and other sea surface temperature patterns.
- **Assessing Burned Areas for Emergency Rehabilitation** - In the wake of severe wildfires, some areas are prone to environmental degradation unless steps are taken to help the soil and vegetation recover. A lesson could be developed using ICE to allow users to estimate the size of the area burned for certain recent wildfires.