

## Remote Sensing Workshops at the Center for Earth Observation

The Center for Earth Observation is offering a series of remote sensing workshops which are designed to enable students to use satellite images in their research. Workshops are held at the Center in the Environmental Science Center – ESC Room 119 – and will be 2 hours in length. There will be a 30 minute presentation covering relevant materials followed by a 90 minute lab exercise.

Workshops are limited to 10 students per session and pre-registration is required. Anyone wishing to attend a workshop should contact Larry Bonneau at 432-3142 or [Laurent.Bonneau@yale.edu](mailto:Laurent.Bonneau@yale.edu) to reserve a seat.

### Introduction to Remote Sensing and ENVI software

**When:** Wed. Sept. 29 3pm – 5pm or Tues. Oct. 5 4pm – 6pm or Wed. Oct. 6 3pm – 5pm

This workshop introduces the basic concepts of satellite-based remote sensing and provides students with the opportunity to work with ITT's ENVI remote sensing software to display and manipulate imagery. Topics include satellite sensor descriptions and data availability, image enhancement techniques, working with multi-spectral images and elevation data.

**Note:** This is a prerequisite to subsequent workshops and is offered twice this semester.

### Image Interpretation Techniques

**When:** Tues. Oct. 12 3pm – 5pm

This workshop will introduce a variety of tools and techniques that can be used to explore satellite images. In addition to simple measurement tools, this will include the use of *Transects* to see how data varies over space and *2D Scatter Plots* to examine how features reflect differently at different wavelengths. Students will then be presented with a series of images to challenge their feature identification skills.

### Converting Satellite Images into Data

**When:** Tues. Oct. 26 3pm – 5pm

This workshop is designed to teach students how to extract data from imagery. Students will use band math to create new index layers. Supervised and unsupervised techniques will be explored to create landcover classification maps and quantify features in the landscape.

### Using Vector Data with Raster-Based Satellite Imagery

**When:** Tues. Nov. 9 3pm – 5pm

GPS data acquired in the field, or ArcGIS shapefile data downloaded from the Internet, can be added to images to provide context and improve visual understanding of the landscape. This workshop integrates vector data for display on raster-based satellite imagery. Vector data can also be used in ENVI software to buffer features and mask or subset images to better focus research and results.