

# Welcome to ENVI

“ENVI is the premier software solution to quickly, easily, and accurately extract information from geospatial imagery. User-friendly tools and specialized modules to read, explore, prepare, analyze, and share information make ENVI is the choice of imagery scientists and analysts around the world.”

## About notation for this exercise:

**Large, bold red font** denotes a specific action

**Blue bold font** indicates the specific ENVI window/GUI in which you are working

The greater than symbol “>” indicates a submenu

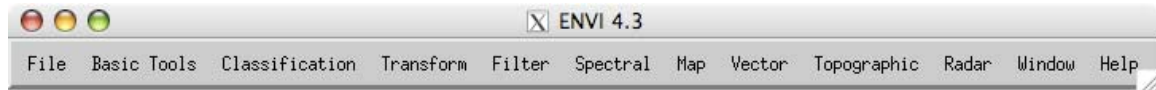
The ENVI workspace spawns lots of windows while you work, so it is important to keep your windows organized on your desktop as you work.

## Open ENVI

Double click on the “ENVI 4.4” icon on your desktop.

## Getting familiar with the ENVI Workspace

### ENVI Main Menu Bar GUI:



Take a look at the submenus under the ENVI main menu bar.

## Load data: Open a Landsat scene

- (1) **Main Menu** File > Open External File > Landsat > GeoTIFF
- (2) In the **Enter TIFF/GeoTIFF Filenames** window, navigate to  
T:\corpus\_data\L7\_2005.05.22\_p26r41\  
(3) Select Landsat bands 1-8
- (4) Select “Okay”
- (5) **Available Bands List** menu appears

## Display a grayscale image

- (1) In **Available Bands List GUI**, select “Gray Scale” radio button
- (2) Select Band 7
- (3) Click “Load Band”
- (4) **Display, Scroll and Zoom** windows appear
- (5) Move red box in **Scroll** window to look at full resolution data in the **Display Window**

## Open Band 2 in a new Display

- (6) In the **Available Bands List** Select Band 2
- (7) Select “Display #1 > New Display”
- (8) Click “Load Band”
- (9) One by one, load Bands 3–8 in Display #2
- (10) Visually compare each with Band 7

## Look at header information

- (1) In the **Available Bands List**, click on the “+” sign next to “Map Info” for Band 1
- (2) Do the same for Band 6 and Band 8, what do you notice?
- (3) Under **Main Menu Bar** go to File > Edit ENVI Header
- (4) In **Edit Header Input File GUI**, select a Band
- (5) Then select “Okay”
- (6) In **Header Info: Window**, select “Edit Attributes”
- (7) Select “Geographic Corners”
- (8) To exit select “Cancel”

## Display an RGB image:

- (1) In **Available Bands List GUI**, select “RGB” radio button
- (2) Select Bands 3, 2, and 1
- (3) Display the 3,2,1 composite in image display#1 by, selecting Display#2 > Display#1
- (4) Click Load RGB
- (5) Explore the image, what can you visually interpret?
- (6) Repeat for Bands 4, 3, 2, then 7,4,2, then 4,5,3 (Display these in Display#2)

## Perform Image Enhancement

- (1) In **Display GUI**, select Enhance > [Image] Linear
- (2) Repeat using other stretches: Linear 0-255, Gaussian, Equalization, Square Root
- (3) In **Display GUI**, select Enhance > Interactive Stretching
- (4) In **Interactive Stretching GUI**, Select Stretch\_Type > Gaussian > Apply
- (5) Repeat using the other stretches

## Link Displays

- (1) Display a 3,2,1 image in Display#1
- (2) Display a 4,5,3 image in Display#2
- (3) In the **Display GUI**, select Tools > Link > Link Displays
- (4) In **Link GUI** make sure Display#1 and Display#2 say “Yes”
- (5) Click Okay
- (6) In the scroll window, move the red box around
- (7) Click in the **Display GUI** to see a dynamic

## Pixel Values

- (1) In the **Display GUI**, select Tools > Cursor Location/Value
- (2) Move your cursor around the Display GUI and watch the values change in the **Cursor/Location GUI**

## Pixel Location

- (1) In the **Display GUI**, select Tools > Pixel Locator
- (2) In the **Pixel Locator GUI**, use the arrow button to toggle between UTM and Geographic Coordinates

- (3) Select DDEG
- (4) Enter the following **Lat: 27.77 N Lon: -97.5 W**
- (5) Where are you?

### Measure Distance

- (1) In **Display GUI**, select Tools > Measurement Tool
- (2) In the **Display Measurement Tool GUI** Select Units > Km
- (3) On the **Display GUI**, double click on the airport, then click on the edge of the Bay
- (4) What's your distance? Change units in the Units Menu if desired

### Display Interactive Scatter Plot

- (1) In the **Display GUI**, select Tools > 2 D Scatter Plots
- (2) In the **Scatter Plot Band Choice**, select a band 1 for X and 2 for Y, select Okay.
- (3) Are the bands correlated?
- (4) Repeat for bands 3 and 4. Are the bands correlated?