Summary of HYDRA 3.4.0 Commands

In all displays

Shift-right click-drag to zoom in image within display

Right click-drag to move image or roam within display

In HYDRA window

Under File, select the VIIRS Directory (a VIIRS folder) or File(s) (MOD02 or MYD02 for MODIS, AIRS for AIRS, SCRIS for CrIS, SATMS for ATMS) to be displayed

Left click on spectral band desired (default is IR window)

Shift-left click-drag to highlight subset of image for display

Left click on display at bottom to create Spectral Display. Left click on arrow at right to have option for New Window or Replace/Overlay. First time will default to New Window. Thereafter New will open another Spectral Display Window while Overlay will overlay additional spectral band on original display.

Tools/RGB Composite will open new display where you have to select the R, G, and B spectral bands desired by left clicking on the color and then on the spectral band. When all three have been selected, left click on Create to add to Dataset tree under Combinations. Left click on Display to see the RGB image.

Tools/Band Math will open new display where you can select bands and operations to be performed on the bands. Select bands desired by left clicking on a box and then on the spectral band. Choose operators by left clicking on the arrows. When you have the equation you want, left click on Create to add to Dataset tree under Combinations. Left click on Display to see the image.

In Spectral and BandMath Displays

Left click-drag to move cursor within display

Left click on bottom left icon (house) to restore original display

When two displays are open, toggle on link button in lower left to link zoom and roam in two displays

Left click on bottom right box (band number) to open range, gamma, reset, and B&W vs color options

Range can manually set BTmin (rmin) and BTmax (rmax). Range entries can be typed in to enhance low or high reflances or BTs.

Gamma can be adjusted to stretch the dynamic range. It is a non-linear mapping from color to value. For infrared color_value = BT**gamma. For visible when gamma = 0.5, this is the square root enhancement popular with VIS.

Reset restores the dynamic range to the min and max values in the display.

Color options include gray (BTmax is black, BTmin is white), inverse gray, rainbow (BTmax is red, BTmin is blue), and inverse rainbow

Tools/Transect left click-drag to change end point of transect. Transect can be opened in several separate displays simultaneously.

Tools/Scatter left click in first image for x-axis then left click in second image for y-axis of scatter plot

In Scatter Display

Selecting purple, green, and blue points (with box or curve) in ScatterPlot will show the associated pixels in the Spectral or BandMath displays; conversely selecting pixels in Spectral or BandMath displays will show the associated points in the ScatterPlot.

Left click on points to create density scatter plot; toggle back and forth between ponts and density

Left click on stats to see stats for purple, green, and blue selections.