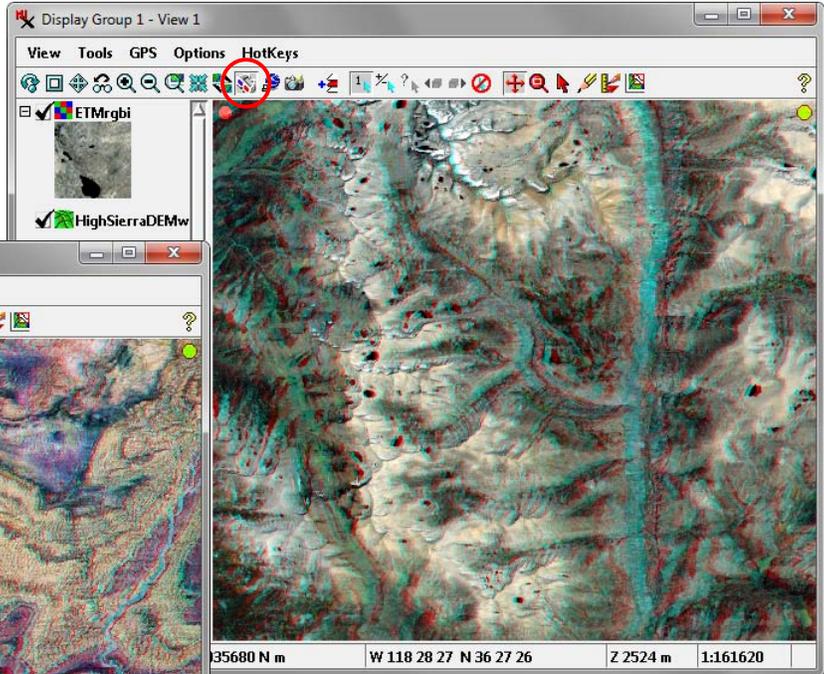


View Geodata in Stereo in 2D Views

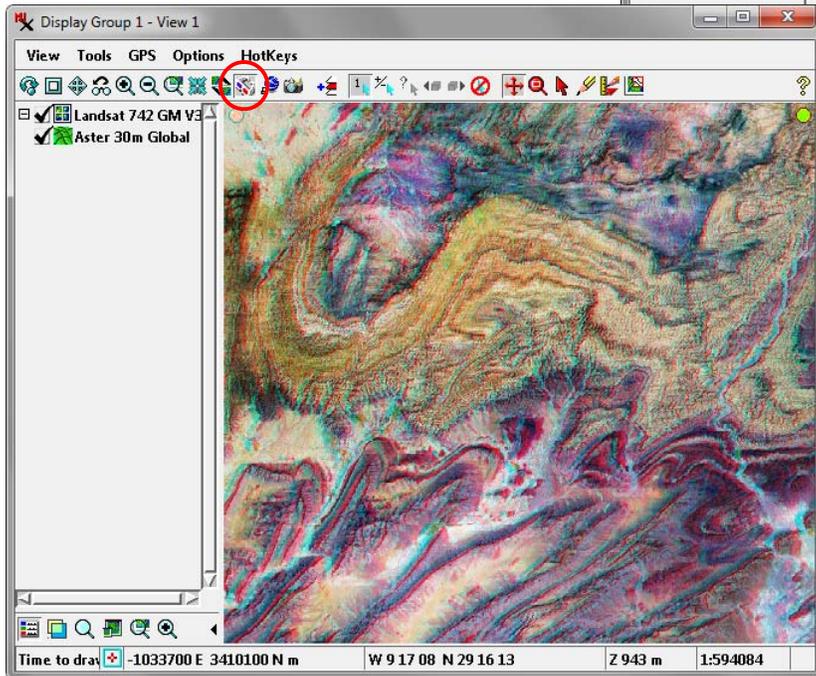
2D spatial view windows in the TNTgis software products can render imagery and geometric data in stereo from an overhead viewpoint, so that image features and geometric elements appear to conform to the 3D surface provided by a terrain layer. Image layers viewed in stereo can include single raster objects (grayscale or color composite), RGB layers, and local or online web tilesets. The terrain layer can be an elevation raster or a local or online web terrain tileset (TNTmips Free is restricted to local geodata and terrain data.)

View these window illustrations through red-cyan anaglyph 3D glasses to see their images in stereo. 

 Press the Stereo icon button on the View window toolbar to turn on stereo display.



Anaglyph stereo display of an orthorectified, pan-sharpened Landsat image (24-bit color-composite raster) of mountainous terrain in California, USA using a 10-meter elevation raster as the terrain layer.

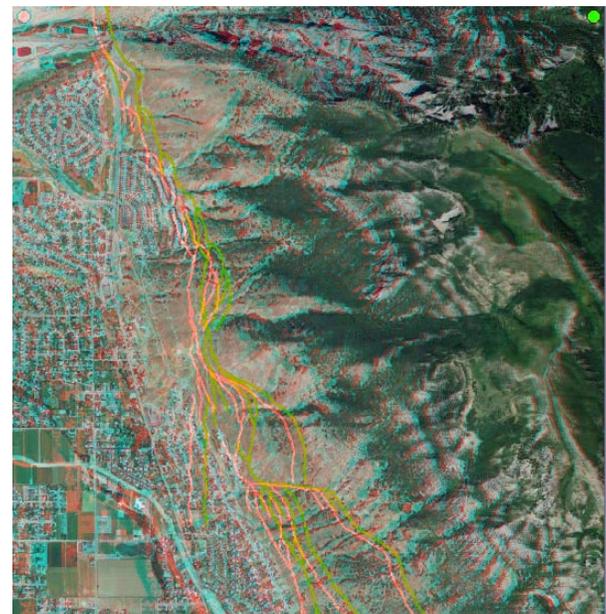


Anaglyph stereo display of an area in the Atlas Mountains of Morocco using two web tilesets hosted at MicroImages.com: the global Landsat 742 web tileset as the image layer and the ASTER 30-meter global web terrain tileset as the terrain layer.

If you have not previously chosen a stereo viewing device, the Stereo Settings window opens automatically when you turn on the Stereo icon button on View window. Use the Device Settings button on this window to select a stereo mode. You can choose from Anaglyph, Interlaced Lines, Interlaced Columns, and Split Window stereo modes to support viewing using anaglyph glasses, an active 3D monitor using shutter glasses, passive 3D monitors using interlacing with polarized glasses, or autostereoscopic screens (see the Technical Guide entitled *Stereo Viewing: Use Any Popular 3D Display Method*).

Several stereo viewing adjustments are also available from the Stereo Settings window to allow you to refine the stereo view; these include *Relative depth scale*, *Maximum relief exaggeration*, and *Percentage of depth beyond the screen* settings (see the TechGuide entitled *Stereo Display Settings*).

(continued)



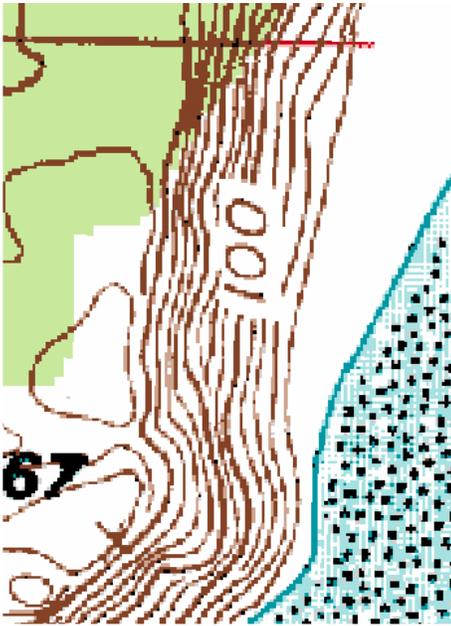
Anaglyph stereo display showing geologic fault lines (orange lines) in a shape object conforming to the terrain surface (NED 10m USA web terrain tileset hosted at MicroImages). The image layer is a 1-meter natural color orthoimage web tileset.

If no terrain layer is present when you turn on the Stereo icon button on the View window, by default you are prompted to choose the data to use for the terrain. In the Stereo Settings window you can choose instead to automatically use the MicroImages online terrain data layer that best matches the geographic extents of your view with the best terrain detail. Using the latter option requires that you maintain an Internet connection while engaging in stereo viewing.

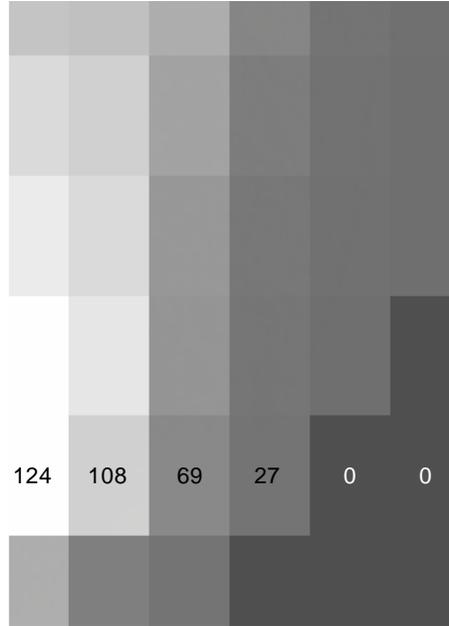
If you use a terrain layer with lower spatial resolution (larger cell size) than the image being displayed, the surface defined by the terrain layer is automatically smoothed using

bilinear interpolation to match the screen resolution of the image in the current view (see illustrations below). This terrain smoothing is automatically applied for any stereo viewing device as well as to anaglyph prints.

Elements in geometric objects (vector, CAD, or shape) are rendered onto the 3D surface defined by the terrain layer. Drawing tools used for editing, sketching, and annotation also follow the terrain surface so you can correctly position elements relative to the terrain (see the TechGuide entitled *Stereo Viewing: Drawing Tools Follow Terrain*).



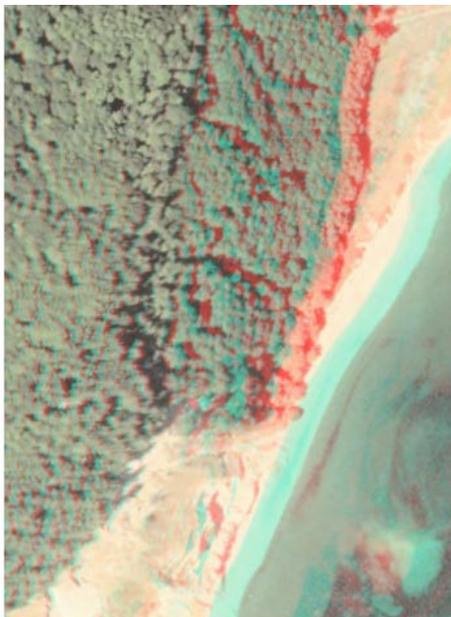
Topographic map of seacliff area used in these illustrations. 20 foot contours and 111 meters (367 feet) of relief.



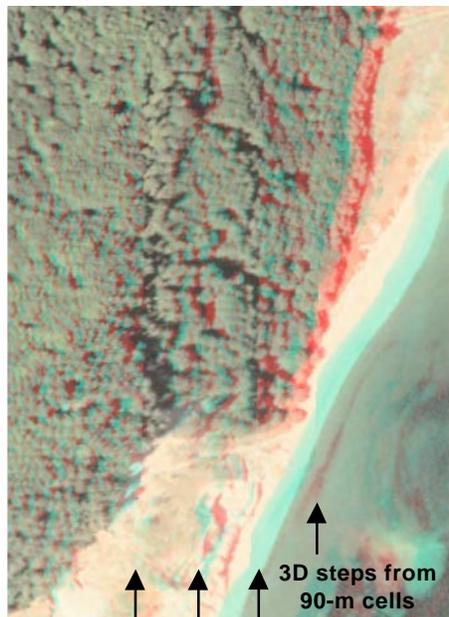
90-m elevation data for the seacliff area. Cell size 62 m by 93 m. Elevations in meters.



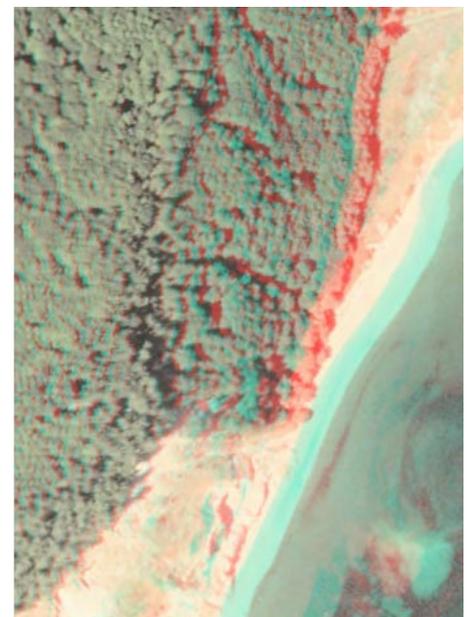
1-m surface automatically interpolated in the stereo view of the seacliff area illustrated below.



Stereo of 1-meter orthoimage at 1X zoom using LIDAR-derived terrain layer with cell size 2.3 by 3.4 meters.



Stereo of 1-meter image using 90-meter elevation cells shown without interpolation as illustrated above.



Smoothed stereo image with automatic interpolation of the 90-meter elevation cells illustrated above.