Render Anaglyph Stereo to Raster

The TNTmips Spatial Display process allows you to view any image in stereo using an elevation raster and to print layouts that include stereo anaglyph images (see the Spatial Display Technical Guides entitled *View Orthoimages in Stereo Using DEM* and *Print Anaglyph Stereo Images*). When the View is in anaglyph stereo mode, the Render to Raster procedure (selected from the Display menu in the Display Manager) also provides the option to render the displayed group to the output raster as anaglyph stereo.

You can render a stereo anaglyph group to a TNT raster in a Project File or to a GeoJP2, GeoTIFF, JPEG, or PNG file for use outside the TNT products, such as in PowerPoint presentations, posters, printed reports, and so on. The Render to Raster dialog provides control over the row/column dimensions and cell size of the output image and includes its own stereo settings for Relative Depth Scale, Maximum Relief Exaggeration, and Percentage of Depth Beyond View Plane. You can use these settings to customize the stereo rendering for the desired application and size of the output image.

When the View group is rendered to a stereo anaglyph image, the stereo displacement is determined after the group contents are resampled to the output raster dimensions. The dimensions and cell size of the output image have an effect on the vertical exaggeration perceived when viewing this image stereo: for a given Relative Depth Scale setting, an output image with larger cell size (smaller image dimensions) will show higher vertical exaggeration (up to a maximum set by the Maximum Relief Exaggeration setting).

As you determine the appropriate stereo settings for the Render to Raster procedure, also keep in mind that stereo rendering in the View itself is applied at screen resolution (i.e., after the View contents are resampled to screen pixels) and also depends on the range of elevations currently visible in the view. The combined result of these effects is to produce a noticeable decrease in vertical exaggeration for large images as you zoom in from full extents to the Maximum Detail (1X) zoom level. If you are rendering to an image size similar to that of the input image, 1X zoom thus provides the best preview of the stereo effect you can expect to see in the rendered image at comparable viewing scale.
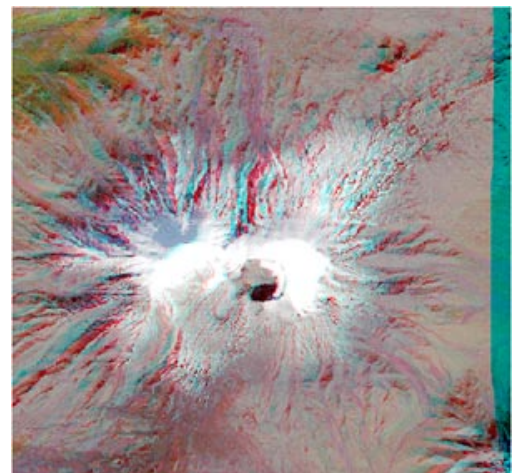
The Stereo Rendering panel on the Render to Raster window is active when the View is in stereo anaglyph mode.
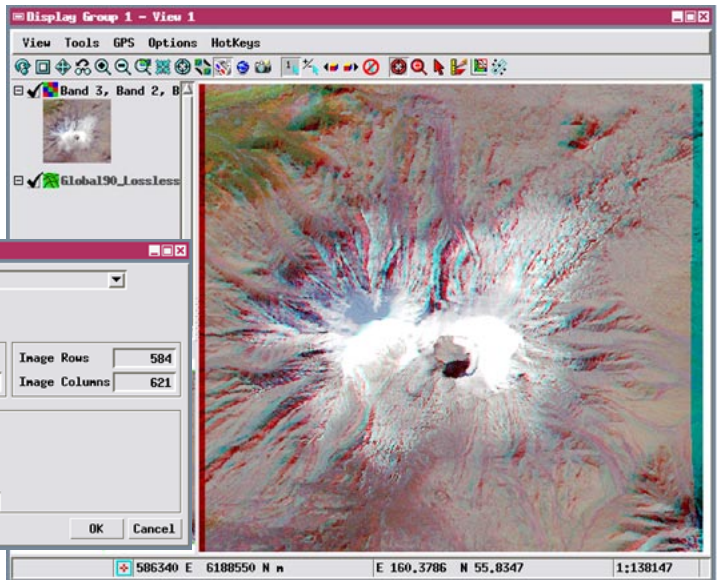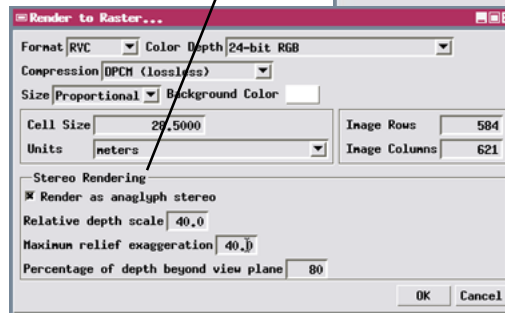
This View displays an extract of a natural color Landsat image of a volcano in Kamchatka (Russia) rendered in anaglyph stereo using MicroImages' Global 90-m Lossless Elevation dataset. The illustrations below show images rendered to anaglyph stereo from this View using differing stereo settings to provide different degrees of vertical exaggeration.
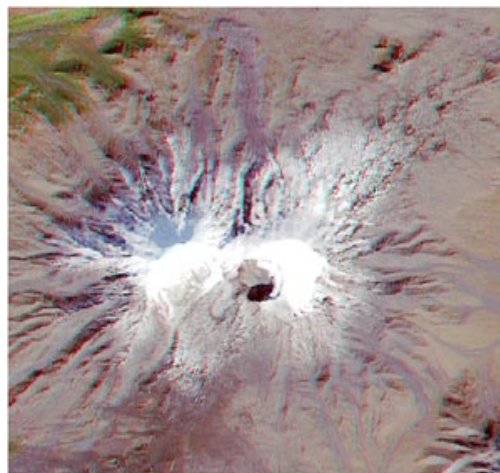
View these illustrations through red-cyan anaglyph 3D glasses to see their images in stereo.

Anaglyph stereo image rendered from the group shown above with Relative Depth Scale and Maximum Relief Exaggeration both set to a value of 10.0.

Anaglyph stereo image rendered from the group shown above with Relative Depth Scale and Maximum Relief Exaggeration both set to a value of 40.0.