Create Contrast-Matched Images

The Raster Contrast Matching process in TNTmips (Image / Filter / Match Contrast) allows you to process a set of grayscale or color-composite rasters to produce new rasters with cell values adjusted to match the contrast of a reference raster of the same type. In the Raster Contrast Matching window (illustrated to the right) you first select a Contrast Reference raster. You then use the Select button to choose one or more raster objects of the same type as the reference to be processed to produce the contrast-adjusted products.

Two Matching Area options are provided for determining the cell value adjustments for the output rasters: Whole Raster and Overlap. If there is substantial overlap between all process rasters and the reference, then either method can be used. If one or more of the process rasters does not overlap the reference, a warning message is shown and the Whole Raster method is set as the required Matching Area option. Best results are obtained when the matching areas include similar surface materials imaged under similar atmospheric conditions and illumination.

A toggle button on the Raster Contrast Matching window lets you choose to copy any contrast tables from the reference raster to the output rasters. Standard menus are also provided for choosing pyramid and compression methods.

Natural-color 1-meter orthoimage color composites of an area in Utah, USA acquired in three different years. The raw images have very different contrast and color properties, with the 2004 image having the best contrast and color saturation. The 2006 and 2009 images were contrast-matched to the 2004 image using the whole raster as the matching area.