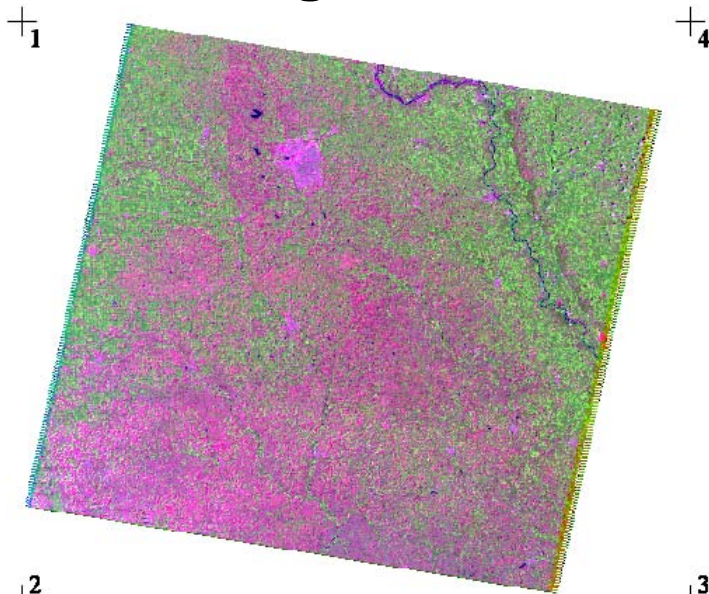


# Auto-Register Landsat 5 to a Global Web Tileset



**Input Image:** Landsat 5 image acquired during the 2009 growing season over an area in southeast Nebraska, displayed in false color with Band 7 = Red, Band 4 = Green, and Band 2 = Blue to produce an "infra-green" image. The image is 8,201 columns by 7101 lines with a cell size of 30 meters. The four corner control points produced from the georeference supplied with the image are also shown.

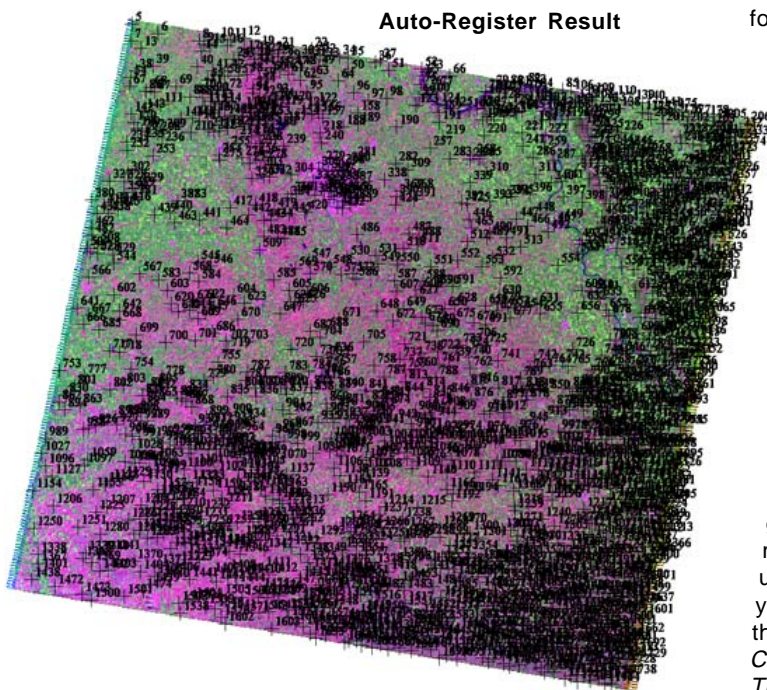


**Reference Image:** The global Landsat 742 standard web tileset published by Microimages for use in TNTmips was used **via the internet** for this auto-registration. The yellow box shows the approximate area covered by the 2009 Landsat 5 scene.

This ~750 gigabyte standard web tileset is available as a reference for all land areas between 50 degrees south and 50 degrees north latitudes. It was constructed from 879 false-color pan-sharpened Landsat image mosaics at 14.25 meter resolution acquired circa 2000 (<https://zulu.ssc.nasa.gov/mrsid/>). The Tileset Export and Tileset Merge processes in TNTmips were used to create this single global tileset.

Note that the approximately 10-year time difference between the reference and 2009 Landsat 5 images does not preclude the use of this global reference image. However, the sample agricultural area in Nebraska has low relief displacement in satellite images. Higher variations in terrain elevation in mountainous areas may significantly degrade the auto-registration result, as potential control points in areas subject to large relief displacements may be filtered out by the Maximum Residual limit you have set for auto-registration.

This global reference is the same tileset that can be viewed in Google Maps, Bing Maps, and Open Layers from [microimages.com](http://microimages.com) and in Geomashups that use these APIs. This global tileset and the USA 1-meter reference image tilesets at [microimages.com](http://microimages.com) for each year from 2003 to 2010 can also be used for manual georeferencing, creating and updating features in your local geospatial objects, and other TNTmips applications (see the Technical Guides *Spatial Display: ~10-meter Global Image Coverage*, *Tilesets: Interpret Features for any Global Area*, and *Tilesets: 10-meter Stereo of Any Global Terrain*). A separate set of web tilesets are also published by MicroImages for use in Google Earth and in TNTmips applications including auto-registration.



**Auto-Register Settings:**

Match green spectral component in each RGB image:

Input Display Green --> Reference Display Green

Initial Accuracy Estimate: 5 cells

Generated Point Spacing: 100 cells

Maximum Point Residual: 2.0 cell

Correlation Patch Size: 128

Maximum Adaptive Model: As Specified (Affine)

**Auto-Register produced 1740 control points**

Using smaller Generated Point Spacing and/or larger Maximum Point Residual values would produce more control points.

**RMS Residuals:**

X = 0.27 cells, Y = 0.31 cells, XY = 0.41 cells, (Model = Affine)

**Mean Absolute Residuals:**

X = 0.20 cells, Y = 0.24 cells