Example of converting CoastWatch Sea Surface Temperature GeoTiff into a floating point GRID using ArcGIS ArcMap 9.1

In response to several user requests, this is tutorial to provide steps of bringing CoastWatch SST data into a GIS system. This is not an endorsement for ArcGIS. Data used for this example can be obtained from the NOAA CoastWatch website at http://coastwatch.noaa.gov. This technique is a simple conversion of a paletted GeoTIFF rescaled to floating point values. [A more direct and accurate approach would be to convert CoastWatch HDF files using CoastWatch supplied software to ESRI binary raster for direct import to a 32-bit GRID.]

Requirements: MODIS SST GeoTIFF, ArcGIS ArcMap 9.x, Spatial Analyst extension.

1. Add GeoTIFF to ArcMap
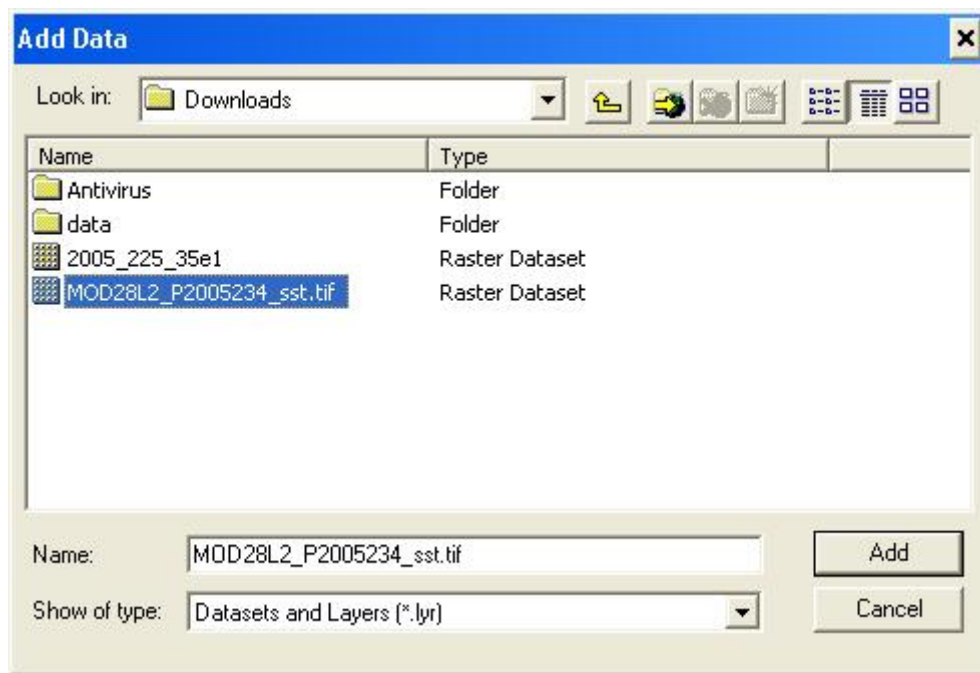
(A prompt will ask about generating pyramids. Pyramids are optional and do not affect the data conversion)
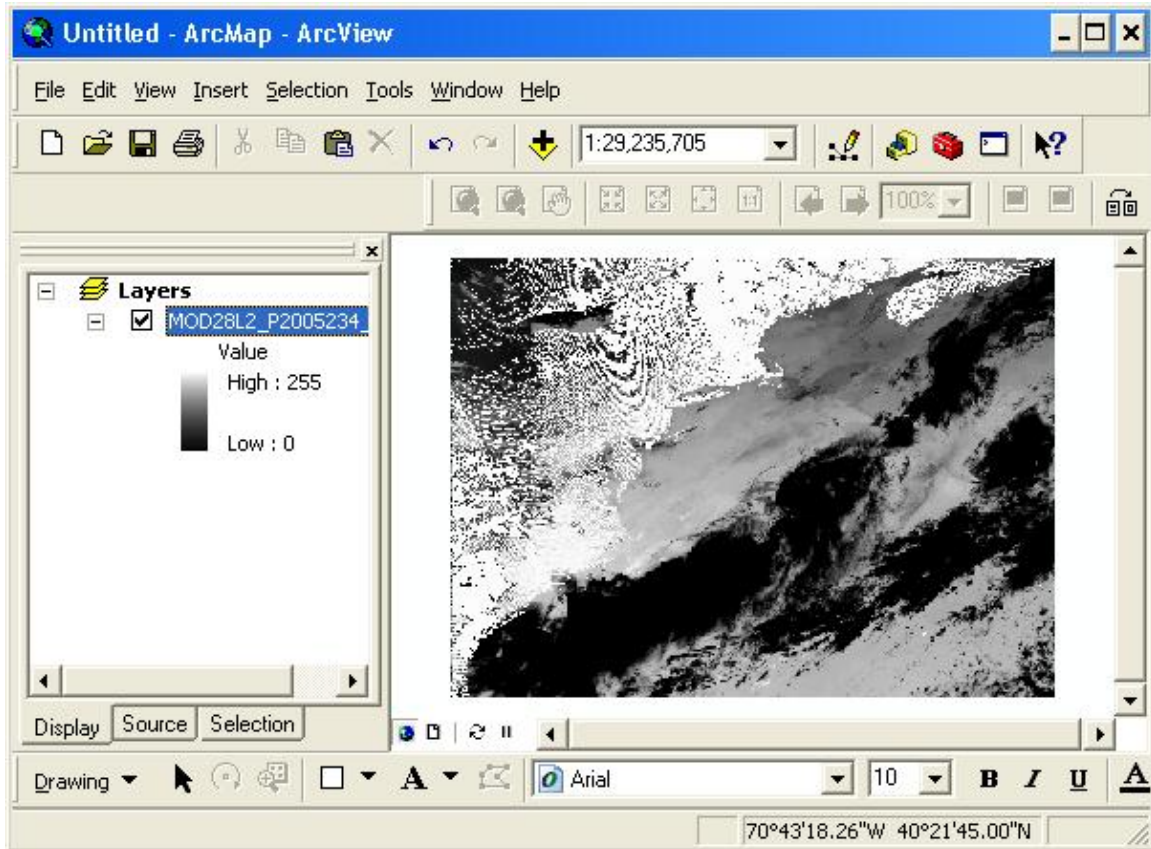
2. Open the Raster Calculator

Click on View=>Toolbar=>Spatial Analyst=>Click on Spatial Analyst Pull Down and select the Raster Calculator

Enter a name for your new GRID and substitute the TIF layer in the SST_Grid placeholder in the equation from the CoastWatch website and click the Evaluate button.

The equation will work on any CoastWatch SST GeoTIFF and properly scales the 8-bit values of 6-255 to their corresponding temperature values. Disregard any temperatures below 0 degrees or above 36 C.
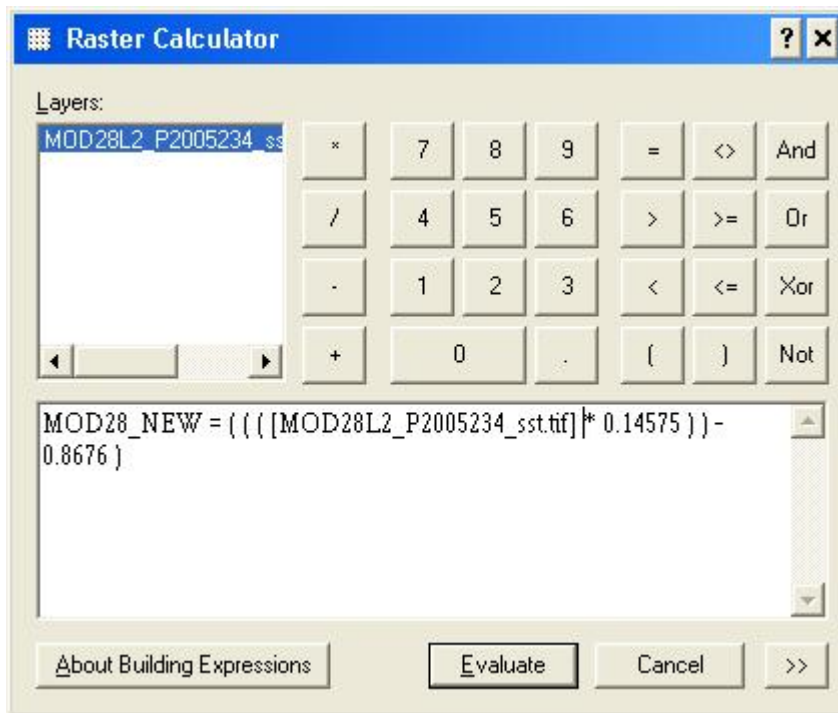
Note: Spaces were added between ALL the inputs to get it accepted by ArcGIS.

The new grid (of floating point values is now added to the View)
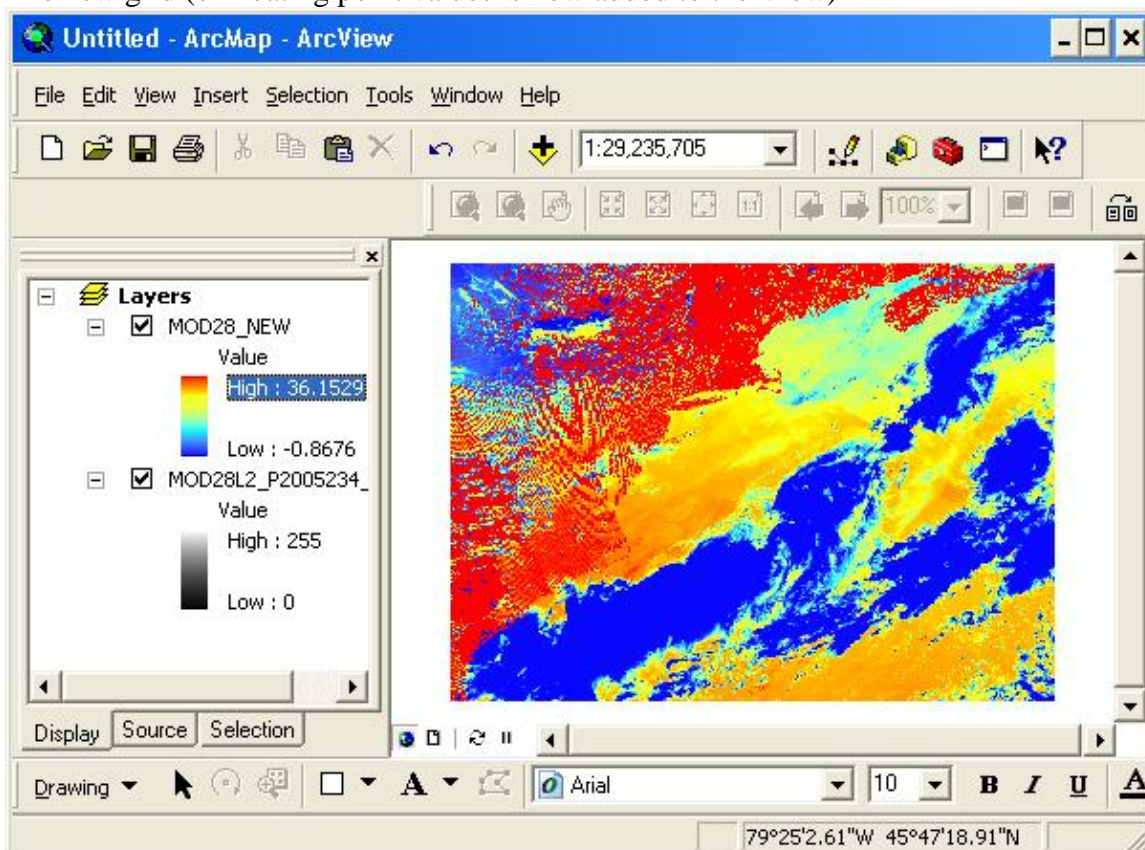
3. Query the new GRID

You can then apply your own shoreline/land mask, coverage, etc and subtract it from the GRID or get the values of interest by using the Info tool: