Subject: Re: Associating GeoTiFF tags with basic Mercator projection parameters?
Posted by David Fanning on Tue, 04 Jan 2011 07:06:48 GMT
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Barry Lesht writes:

> I've been through the GeoTiFF threads here and, as often advised, have
> tried to make sense of the GeoTiFF standard (http://remotesensing.org/
> geotiff/spec/geotiff6.html#6.3.3) without success. I'm hoping that
> someone with knowledge of using IDL to write GeoTiff files can give me
> some help with the following problem.
>
> I have a set of images that were created by transforming satellite
> data onto a basic (single standard parallel at the equator) Mercator
> projection. The projected images were created using IDL with a
> minimal set of parameters; I know the size of the image (pixels,
> lines), its geographic limits, the central meridian, and that it is
> isotropic. Here is a header dump of the mapped files (which are hdf).
>
> Sample:Projection Category = "IDL" ;
> Sample:Projection Name = "Mercator" ;
> Sample:Limit = 38.8744010925293, -92.41079711914062,
> 50.60269927978516, -75.86920166015625 ;
> Sample:Projection ID = 9 ;
> Sample:Latitude Center = 0. ;
> Sample:Longitude Center = -84.13999938964844 ;
> Sample:Rotation = 0. ;
> Sample:Position = 0., 0., 1., 1. ;
> Sample:Isotropic = 1 ;
> Sample:Scale = 0. ;
> Sample:Central_Azimuth = 0. ;
>
> I do some manipulation of these files in my code and need to create
> output mapped images of an extracted region in the form of GeoTiFF
> files that can be read by ArcMap. The problem is that I seem to
> unable to find the correct set of GeoTiFF tags to accomplish this.
> For example:
>
> g_tags = { $
> ModelPixelScaleTag: [0.016153906d, 0.011453418d, 0d], $
> ModelTiepointTag: [0, 0, 0, -84.813, 46.580, 0.], $
> GTModeTypeGeoKey: 1, $; Projected
> GTRasterTypeGeoKey: 1, $; Pixel represents
> area
> GeographicTypeGeoKey: 4326, $; WGS84
> GeogLinearUnitsGeoKey: 9001, $; meters
> GeogAngularUnitsGeoKey: 9102, $; angular degree
> ProjCoordTransGeoKey: 7, $; Mercator

```
>            ProjNatOriginLongGeoKey: -84.13999d,   $
>            ProjNatOriginLatGeoKey: 0.0       $
>            }
>  WRITE_TIFF, tif_name, new_comp_image, /FLOAT, GEOTIFF=g_tags
>
>  Produces files that "lack spatial reference data" when read by
>  ArcMap.  I'd sure appreciate some guidance - maybe there is a better
>  way to accomplish this?
```

I'm not a GeoTiff expert, but every GeoTiff file I've ever dealt with had tie points in Cartesian coordinates (projected meters). It looks to me like yours are in units of latitude/longitude. In any case, you say they are in meters (9001), so...

You can see how I created a GeoTIFF image (once!) in this article:

http://www.dfanning.com/map_tips/goesmap.html

Cheers,

David

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David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")