Subject: a question on correct structure setting for EASE2 Grid in write_tiff
Posted by yinghui Liu on Tue, 01 Nov 2016 16:53:58 GMT
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Dear All,

I have a question on write_tiff using IDL and can not solve it. I am writing to you to ask for your help.

I am re-mapping the data on EASE2 Grid, using a .gpd file as the following;

Map Projection: Azimuthal Equal-Area (ellipsoid)
Map Reference Latitude: 90.0
Map Reference Longitude: 0.0
Map Rotation: 0.0
Map Equatorial Radius: 6378137.0 ; wgs84
Map Eccentricity: 0.081819190843 ; wgs84
Map Origin X: -4512000. ; meters -1*9024*1000/2
Map Origin Y: 4512000. ; meters 9024*1000/2
Grid Map Origin Column: -0.5
Grid Map Origin Row: -0.5
Grid Map Units per Cell: 1000. ; meters
Grid Width: 9024
Grid Height: 9024

This gpd file is adapted from a .gpd file from NSIDC, which covering the whole North Hemisphere.

; 1 km Northern Hemisphere EASE-Grid-2.0 grid parameter definition (nested in 36, 9 and 3 km gpd).
; This projection uses the WGS84 ellipsoid.
; The pole is exactly at the intersection of the middle 4 cells.
; The left/right/top/bottom latitude is 0.127234 degrees North
; (the equator goes just outside the edges of the grid coverage along the sides)
Map Projection: Azimuthal Equal-Area (ellipsoid)
Map Reference Latitude: 90.0
Map Reference Longitude: 0.0
Map Rotation: 0.0
Map Equatorial Radius: 6378137.0 ; wgs84
Map Eccentricity: 0.081819190843 ; wgs84
Map Origin X: -9000000. ; meters
Map Origin Y: 9000000. ; meters
Grid Map Origin Column: -0.5
Grid Map Origin Row: -0.5
Grid Map Units per Cell: 1000. ; meters
Grid Width: 18000
Grid Height: 18000

After remapping, I want to write the data to GeoTIFF using IDL. The test IDL code I am using is as the following,

```
pro test

d= fltarr(9024,9024)

d(3000:6000,3000:6000) = 15.
d(6000:6500,6000:6500)=25.

g_tags = {  ModelPixelScaleTag:[1000.d, 1000.d, 0d], $
ModelTiepointTag:[-0.5d,-0.5d,0d,-4512000.d,4512000.d,0d], $
       GTModelTypeGeoKey: 1s,  $
       GTRasterTypeGeoKey: 1s, $
       GeographicTypeGeoKey: 4326s, $
       ;ProjFalseEastingGeoKey: 0d,  $
       ;ProjFalseNorthingGeoKey: 0d, $
       ProjCenterLongGeoKey: 0d,    $
       ProjCenterLatGeoKey: 90d,    $
       ;ProjCenterEastingGeoKey: 4511.5d, $
       ;ProjCenterNorthingGeoKey: 4511.5d, $
       ProjCoordTransGeoKey: 10s,   $
       ProjLinearUnitsGeoKey: 9001s   $
     }

write_tiff,'test.tif',d,/float,geotiff=g_tags

end
```

It does not work at all, and can not generate a GeoTIFF file. I have been reading the GeoTIFF specification for a couple of weeks, but still have no clue what the correct setting for the g_tags is.

I am wondering if you could help me on correctly writing the test data in a tiff file?

Thanks very much in advance for your time.

Yinghui Liu