
Subject: Overlaying data on a MODIS reprojected image created with the TrueColor package

Posted by [Steve\[7\]](#) on Fri, 04 Dec 2015 10:12:45 GMT

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Hi

I have created a reprojected MODIS true color image using the TrueColor package
(<ftp://ftp.ssec.wisc.edu/pub/IMAPP/MODIS/TrueColor/>)

I now want to read this image into IDL and overlay some data on top of the image e.g. an aircraft flight track. I am however having trouble getting the map projection correct.

Note that the gpd file used in the TrueColor packaged to create the original image contains the following

Map Projection: Azimuthal Equal-Area
Map Reference Latitude: 62.500
Map Reference Longitude: -10.000
Grid Map Units per Cell: 0.250
Grid Width: 4400.0
Grid Map Origin Column: 2199.5
Grid Height: 3400.0
Grid Map Origin Row: 1699.5

I have tried the following code which attempts to use the method from David Fanning's page
http://www.idlcoyote.com/ng_tips/mapnograd.php

```
;read in original image  
img = READ_TIFF('true.tif')  
img = REVERSE(img,3)
```

```
s=SIZE(img,/DIMENSIONS) ;3x4400x3400
```

```
projection='Lambert Azimuthal'  
latcen = 62.50  
loncen = -10.0  
res = 0.25
```

```
map = Obj_New('cgMap', projection, /OnImage)  
uv = map -> Forward(Loncen, Latcen)  
uv_xcenter = uv[0,0]  
uv_ycenter = uv[1,0]  
xrange = [uv_xcenter - ((s[1]/2.)*res*1000.), uv_xcenter + ((s[1]/2.)*res*1000.)]  
yrange = [uv_ycenter - ((s[2]/2.)*res*1000.), uv_ycenter + ((s[2]/2.)*res*1000.)]  
map -> SetProperty, XRange=xrange, YRange=yrange  
cgDisplay, s[1]/4., s[2]/4.  
cgImage, img, Margin=0.1
```

```
map -> Draw
cgMap_Grid, MAP=map, /BOX_AXES, /cgGRID
cgMap_Continents, MAP=map, /continents, /hires
```

The above code displays the original image on a map which looks about right. However the coastlines produced by cgMap_Continents do not overlay the real landmass boundaries in the original image. Clearly the map projection isn't quite correct.

Until I get this sorted I can't overlay data onto the image.

Any ideas on what I am doing wrong?

Thanks in advance

Steve

Subject: Re: Overlaying data on a MODIS reprojected image created with the TrueColor package

Posted by [David Fanning](#) on Fri, 04 Dec 2015 13:57:04 GMT

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Steve writes:

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TrueColor package (ftp://ftp.ssec.wisc.edu/pub/IMAPP/MODIS/TrueColor/)
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```

It's hard to know without seeing the result, but I suspect you might have to shift your range by half a grid unit to match the grid origins.

Cheers,

David

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.idlcoyote.com/>

Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Subject: Re: Overlaying data on a MODIS reprojected image created with the TrueColor package

Posted by [Steve\[7\]](#) on Fri, 04 Dec 2015 15:43:18 GMT

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On Friday, 4 December 2015 13:57:09 UTC, David Fanning wrote:

> Steve writes:

>

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> TrueColor package (<ftp://ftp.ssec.wisc.edu/pub/IMAPP/MODIS/TrueColor/>)

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>> yrange = [uv_ycenter - ((s[2]/2.)*res*1000.), uv_ycenter + ((s[2]/2.)*res*1000.)]

>> map -> SetProperty, XRange=xrange, YRange=yrange

>> cgDisplay, s[1]/4., s[2]/4.

>> cgImage, img, Margin=0.1

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>> Until I get this sorted I can't overlay data onto the image.
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>> Any ideas on what I am doing wrong?
>
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> have to shift your range by half a grid unit to match the grid origins.
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> David
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> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
> Sepore ma de ni thue. ("Perhaps thou speakest truth.")
```

So when I said the original image on the map looks about right I was perhaps being generous! The coastlines are offset in places by a few tenths of a degree latitude for example. Note that the grid unit is 250 metres so much smaller than this difference.

Perhaps I am making incorrect assumptions on what the image output by the TrueColor package contains i.e. the info in the gpd file is not sufficient.

Steve

Subject: Re: Overlaying data on a MODIS reprojected image created with the TrueColor package

Posted by [David Fanning](#) on Fri, 04 Dec 2015 19:18:58 GMT

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steven_abel@hotmail.com writes:

> So when I said the original image on the map looks about right I was perhaps being generous!

The coastlines are offset in places by a few tenths of a degree latitude for example. Note that the grid unit is 250 metres so much smaller than this difference.

>

> Perhaps I am making incorrect assumptions on what the image output by the TrueColor package contains i.e. the info in the gpd file is not sufficient.

It is not entirely unknown for the map projection information in a file to just be wrong. :-)

I really can't speak intelligently about it without seeing it. Can you send me the image?

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.idlcoyote.com/>

Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Subject: Re: Overlaying data on a MODIS reprojected image created with the TrueColor package

Posted by [Steve\[7\]](#) on Fri, 04 Dec 2015 19:24:42 GMT

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I will send you the image on Monday. Appreciate your offer to help.

Thanks

Steve

Subject: Re: Overlaying data on a MODIS reprojected image created with the TrueColor package

Posted by [Steve\[7\]](#) on Mon, 07 Dec 2015 09:35:06 GMT

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On Friday, 4 December 2015 19:24:44 UTC, Steve wrote:

> I will send you the image on Monday. Appreciate your offer to help.

>

> Thanks

>

> Steve

Hi David

I have sent a Dropbox link to the image and code to your coyote email address. Let me know if you don't receive it.

Steve

Subject: Re: Overlaying data on a MODIS reprojected image created with the TrueColor package

Posted by [Steve\[7\]](#) on Wed, 16 Dec 2015 09:49:12 GMT

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On Monday, 7 December 2015 09:35:15 UTC, Steve wrote:

> On Friday, 4 December 2015 19:24:44 UTC, Steve wrote:

>> I will send you the image on Monday. Appreciate your offer to help.

>>

>> Thanks

>>

>> Steve

>

> Hi David

>

> I have sent a Dropbox link to the image and code to your coyote email address. Let me know if you don't receive it.

>

> Steve

UPDATE: Laim Gumley pointed me towards the Polar2Grid package

http://cimss.ssec.wisc.edu/cspp/npp_polar2grid_v2.0.shtml which allows you to output MODIS true color GeoTiff images. These additional information in the GeoTiff image has made it easier to use in IDL and I can now overlay data on the image.
