
Subject: Re: GeoTiff- grid

Posted by [David Fanning](#) on Mon, 21 Jan 2008 22:39:14 GMT

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robinson.inj@gmail.com writes:

> I was wondering if someone can show me how to extract lat and lon
> values for each pixel from a Geotiff image. Using ENVI i observed that
> my results were horrible.

I have a feeling you haven't been reading my web page lately. :-)

The last two articles will explain how this can be done
quite easily.

<http://www.dfanning.com/documents/tips.html#NewTips>

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming (www.dfanning.com)

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

Subject: Re: GeoTiff- grid

Posted by [robinson.inj](#) on Tue, 22 Jan 2008 01:03:49 GMT

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On Jan 21, 4:39 pm, David Fanning <n...@dfanning.com> wrote:

> robinson....@gmail.com writes:

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>> values for each pixel from a Geotiff image. Using ENVI i observed that
>> my results were horrible.

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> I have a feeling you haven't been reading my web page lately. :-)

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> The last two articles will explain how this can be done
> quite easily.

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> <http://www.dfanning.com/documents/tips.html#NewTips>

>

> Cheers,

>

> David

> --

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

Hi David, today I was following http://www.dfanning.com/map_tips/tiffoverlay.html
ALL day. Probably I missed something. Let s se what happen tomorrow.
Robinson

Subject: Re: GeoTiff- grid

Posted by [David Fanning](#) on Tue, 22 Jan 2008 01:48:48 GMT

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Robinson writes:

- > Hi David, today I was following http://www.dfanning.com/map_tips/tiffoverlay.html
- > .html
- > ALL day. Probably I missed something. Let s se what happen tomorrow.

Humm, well, OK, here is an article that spells it out:

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

Be aware, however, that there is an error either in this article, or in the previous one. But the two articles can't **both** be right. ;-)

Here is my problem, perhaps someone can help. Do the corner values printed out by a program like GeoTiff dump program like listgeo list the values in the **center** of the corner pixels in the image, or values on the **edge** of the image?

If the former, then the new article is correct and the old article is incorrect. If the latter, then five days of struggling with this leaves me no further ahead then I was before. :-(

Have I mentioned that I **hate** map projections?

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: <http://www.dfanning.com/>
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Subject: Re: GeoTiff- grid
Posted by [David Fanning](#) on Tue, 22 Jan 2008 21:12:54 GMT
[View Forum Message](#) <> [Reply to Message](#)

David Fanning writes:

> Humm, well, OK, here is an article that spells it out:
>
> http://www.dfanning.com/map_tips/pixel_to_ll.html
>
> Be aware, however, that there is an error either in this
> article, or in the previous one. But the two articles
> can't *both* be right. ;-)

Well, after thinking about this overnight, I think by
some miraculous twist of fate, both of these articles
ARE right. I'm convinced of it. At least for the time
being. :-)

Cheers,

David

--

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Coyote's Guide to IDL Programming (www.dfanning.com)
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Subject: Re: GeoTiff- grid
Posted by [robinson.inj](#) on Tue, 22 Jan 2008 22:03:54 GMT
[View Forum Message](#) <> [Reply to Message](#)

On Jan 22, 3:12 pm, David Fanning <n...@dfanning.com> wrote:

> David Fanning writes:
>> Humm, well, OK, here is an article that spells it out:
>
>> http://www.dfanning.com/map_tips/pixel_to_ll.html
>
>> Be aware, however, that there is an error either in this
>> article, or in the previous one. But the two articles
>> can't *both* be right. ;-)

>
> Well, after thinking about this overnight, I think by
> some miraculous twist of fate, both of these articles
> ARE right. I'm convinced of it. At least for the time
> being. :-)
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> Cheers,
>
> David
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming (www.dfanning.com)
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

David, I followed your examples but still have problems. In the uv
space my corners IDL and ENVI agreed

UpperLeftCoordinate:(-167346.0185E, 3677892.5566N)

LowerRightCoordinate:(1222128.8184E,2983386.7945N)

However in the lon/lat space i got:

IDL: UpperLeftCoordinate: (-98.555279E, 45.411655N)

LowerRightCoordinate: (-81.568627E,51.346972N)

ENVI: UpperLeftCoordinate: (-98.09914722E, 33.30501389N)

LowerRightCoordinate:(-84.82142500E, 27.55810278N)

My image has 3000 col x 1500 lin. The pix resolution is 463.3127
meters.

```
mercatorMap = MAP_PROJ_INIT('Mercator', $  
    DATUM=8, $ ; WGS84  
    CENTER_LATITUDE=20.000, $  
    CENTER_LONGITUDE=-96.5000)
```

I tried different things but in all cases idl and envi did not match,
and I do not have any clue where is my error.

Any suggestion is welcome.

Robinson

Subject: Re: GeoTiff- grid

Posted by [David Fanning](#) on Tue, 22 Jan 2008 22:23:35 GMT

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robinson.inj@gmail.com writes:

> David, I followed your examples but still have problems. In the uv
> space my corners IDL and ENVI agreed

> UpperLeftCoordinate:(-167346.0185E, 3677892.5566N)
> LowerRightCoordinate:(1222128.8184E,2983386.7945N)
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> LowerRightCoordinate:(-84.82142500E, 27.55810278N)
> My image has 3000 col x 1500 lin. The pix resolution is 463.3127
> meters.
>
> mercatorMap =3D MAP_PROJ_INIT('Mercator', \$
> DATUM=3D8, \$; WGS84
> CENTER_LATITUDE=3D20.000, \$
> CENTER_LONGITUDE=3D-96.5000)
>
> I tried different things but in all cases idl and envi did not match,
> and I do not have any clue where is my error.
>
> Any suggestion is welcome.

Why don't you post the listgeo output, so we can see what it
thinks the map projection is suppose to be.

Cheers,

David

--

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

Subject: Re: GeoTiff- grid
Posted by [robinson.inj](#) on Tue, 22 Jan 2008 22:40:14 GMT
[View Forum Message](#) <> [Reply to Message](#)

On Jan 22, 4:23 pm, David Fanning <n...@dfanning.com> wrote:
> robinson....@gmail.com writes:
>> David, I followed your examples but still have problems. In the uv
>> space my corners IDL and ENVI aggred
>> UpperLeftCoordinate:(-167346.0185E, 3677892.5566N)
>> LowerRightCoordinate:(1222128.8184E,2983386.7945N)
>> However in the lon/lat space i got:
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>> LowerRightCoordinate: (-81.568627E,51.346972N)
>> ENVI: UpperLeftCoordinate: (-98.09914722E, 33.30501389N)

```

>> LowerRightCoordinate:(-84.82142500E, 27.55810278N)
>> My image has 3000 col x 1500 lin. The pix resolution is 463.3127
>> meters.
>
>> mercatorMap =3D MAP_PROJ_INIT('Mercator', $
>>     DATUM=3D8, $ ; WGS84
>>     CENTER_LATITUDE=3D20.000, $
>>     CENTER_LONGITUDE=3D-96.5000)
>
>> I tried different things but in all cases idl and envi did not match,
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>
> Why don't you post the listgeo output, so we can see what it
> thinks the map projection is suppose to be.
>
> Cheers,
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> David
>
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming (www.dfanning.com)
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")- Hide quoted text -
>
> - Show quoted text -

```

I hope it helps

```

Geotiff_Information:
  Version: 1
  Key_Revision: 1.0
  Tagged_Information:
    ModelTiepointTag (2,3):
      0      0      0
      -167346.019  3677892.56  0
    ModelPixelScaleTag (1,3):
      463.312717  463.312717  0
  End_Of_Tags.
  Keyed_Information:
    GTModelTypeGeoKey (Short,1): ModelTypeProjected
    GTRasterTypeGeoKey (Short,1): RasterPixellsArea
    GeographicTypeGeoKey (Short,1): GCS_WGS_84
    GeogLinearUnitsGeoKey (Short,1): Linear_Meter
    GeogAngularUnitsGeoKey (Short,1): Angular_Degree

```

ProjectedCSTypeGeoKey (Short,1): User-Defined
ProjectionGeoKey (Short,1): User-Defined
ProjCoordTransGeoKey (Short,1): CT_Mercator
ProjLinearUnitsGeoKey (Short,1): Linear_Meter
ProjFalseEastingGeoKey (Double,1): 0
ProjFalseNorthingGeoKey (Double,1): 0
ProjCenterLongGeoKey (Double,1): -96.5
ProjCenterLatGeoKey (Double,1): 20
End_Of_Keys.
End_Of_Geotiff.

Projection Method: CT_Mercator
ProjNatOriginLatGeoKey: 20.000000 (20d 0' 0.00"N)
ProjNatOriginLongGeoKey: -96.500000 (96d30' 0.00"W)
ProjScaleAtNatOriginGeoKey: 1.000000
ProjFalseEastingGeoKey: 0.000000 m
ProjFalseNorthingGeoKey: 0.000000 m
GCS: 4326/WGS 84
Datum: 6326/World Geodetic System 1984
Ellipsoid: 7030/WGS 84 (6378137.00,6356752.31)
Prime Meridian: 8901/Greenwich (0.000000/ 0d 0' 0.00"E)
Projection Linear Units: 9001/metre (1.000000m)

Corner Coordinates:
Upper Left (-167346.019, 3677892.557)
Lower Left (-167346.019, 2982923.482)
Upper Right (1222592.131, 3677892.557)
Lower Right (1222592.131, 2982923.482)
Center (527623.056, 3330408.019)

Subject: Re: GeoTiff- grid

Posted by [David Fanning](#) on Tue, 22 Jan 2008 22:47:19 GMT

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robinson.inj@gmail.com writes:

> David, I followed your examples but still have problems. In the uv
> space my corners IDL and ENVI agreed
> UpperLeftCoordinate:(-167346.0185E, 3677892.5566N)
> LowerRightCoordinate:(1222128.8184E,2983386.7945N)
> My image has 3000 col x 1500 lin. The pix resolution is 463.3127
> meters.

I get an image resolution of 2999 x 1499 when I take
the corner coordinates, subtract them, and divide
by the pixel resolution. The fact that ENVI and IDL
agree is a good thing, but in all of the GeoTIFF

files I've been working, with doing this arithmetic gives me the image size exactly. So, that concerns me.

```
> However in the lon/lat space i got:  
> IDL: UpperLeftCoordinate: (-98.555279E, 45.411655N)  
>      LowerRightCoordinate: (-81.568627E,51.346972N)  
> ENVI: UpperLeftCoordinate: (-98.09914722E, 33.30501389N)  
>      LowerRightCoordinate:(-84.82142500E, 27.55810278N)
```

Unless you are using the **completely** wrong map projection (how did you determine what this is?), then it looks to me like you didn't convert the corners you thought you were converting.

But I would like to see the listgeo output to know what I am dealing with here.

Cheers,

David

--

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