
Subject: Re: Retrieve pixel values from GeoTIFF
Posted by [penteado](#) on Sat, 27 Nov 2010 20:06:20 GMT
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On Nov 27, 4:53 pm, mankoff <mank...@gmail.com> wrote:
> I'm trying to get the pixel values (color) from a GeoTIFF file when I
> have lat,lon arrays. I have the projection set up using MAP_PROJ_INIT,
> and using MAP_PROJ_FORWARD I can convert from my latitude and
> longitude to map coordinates, but the map coordinates appear to be in
> units meter from some reference location. What is the best routine to
> convert from lat,lon (or u,v) to x,y indices?

It seems that map_proj_forward() can do what you want, you are just not giving it the right projection parameters. What is in the geotiff structure?

Subject: Re: Retrieve pixel values from GeoTIFF
Posted by [David Fanning](#) on Sat, 27 Nov 2010 20:13:43 GMT
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mankoff writes:

> I'm trying to get the pixel values (color) from a GeoTIFF file when I
> have lat,lon arrays. I have the projection set up using MAP_PROJ_INIT,
> and using MAP_PROJ_FORWARD I can convert from my latitude and
> longitude to map coordinates, but the map coordinates appear to be in
> units meter from some reference location. What is the best routine to
> convert from lat,lon (or u,v) to x,y indices?

I use GeoCoord from the Catalyst Library. It reads the GeoTIFF file, and sets everything up for you automatically. :-)

Cheers,

David

--
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.")

Subject: Re: Retrieve pixel values from GeoTIFF

Posted by [mankoff](#) on Sat, 27 Nov 2010 20:45:06 GMT

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On Nov 27, 12:06 pm, Paulo Penteadó <pp.pente...@gmail.com> wrote:

> On Nov 27, 4:53 pm, mankoff <mank...@gmail.com> wrote:

>

>> I'm trying to get the pixel values (color) from a GeoTIFF file when I
>> have lat,lon arrays. I have the projection set up using MAP_PROJ_INIT,
>> and using MAP_PROJ_FORWARD I can convert from my latitude and
>> longitude to map coordinates, but the map coordinates appear to be in
>> units meter from some reference location. What is the best routine to
>> convert from lat,lon (or u,v) to x,y indices?

>

> It seems that map_proj_forward() can do what you want, you are just
> not giving it the right projection parameters. What is in the geotiff
> structure?

Working through a simpler well-documented example (thanks to David)
here:

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

The "xy" returned from MAP_PROJ_FORWARD contains negative values, so
this cannot be indices into the image. Should I be using CONVERT_COORD
to go from DATA to DEVICE with the xy array?

David: I've also tried using your GeoCoord object, and can display the
graphic and coastlines just fine, but again, am stuck at the step of
"convert (lon,lat)=(-100,-75) to (x,y) for indexing into the original
TIF".

-k.

Subject: Re: Retrieve pixel values from GeoTIFF

Posted by [David Fanning](#) on Sat, 27 Nov 2010 20:52:00 GMT

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mankoff writes:

> David: I've also tried using your GeoCoord object, and can display the
> graphic and coastlines just fine, but again, am stuck at the step of
> "convert (lon,lat)=(-100,-75) to (x,y) for indexing into the original
> TIF".

```
mapCoord = GeoCoord('mygeotiff_file.tif')
mapStruct = mapCoord -> GetMapStructure()
xy = Map_Proj_Forward(lon,lat, Map_Structure=mapStruct)
x = xy[0]
```

y = xy[1]

Cheers,

David

--

David Fanning, Ph.D.

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Subject: Re: Retrieve pixel values from GeoTIFF

Posted by [David Fanning](#) on Sat, 27 Nov 2010 20:59:07 GMT

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David Fanning writes:

```
>
> mankoff writes:
>
>> David: I've also tried using your GeoCoord object, and can display the
>> graphic and coastlines just fine, but again, am stuck at the step of
>> "convert (lon,lat)=(-100,-75) to (x,y) for indexing into the original
>> TIF".
>
> mapCoord = GeoCoord('mygeotiff_file.tif')
> mapStruct = mapCoord -> GetMapStructure()
> xy = Map_Proj_Forward(lon,lat, Map_Structure=mapStruct)
> x = xy[0]
> y = xy[1]
```

Oh, wait! You said you want to index into the original image. (My son is bugging me about buying a car today, so I'm distracted. :-)

In addition to the above, I would do this.

```
mapCoord -> GetProperty, XRANGE=xr, YRANGE=xy
s = Size(image, /Dimensions)
xvec = Scale_Vector(Findgen(s[0]), xr[0], xr[1])
xindex = Value_Locate(xvec, x)
yvec = Scale_Vector(Findgen(s[1]), yr[0], yr[1])
yindex = Value_Locate(yvec, y)
```

Then,

Print, image[xindex, yindex]

Cheers,

David

--

David Fanning, Ph.D.

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Subject: Re: Retrieve pixel values from GeoTIFF

Posted by [David Fanning](#) on Sat, 27 Nov 2010 21:03:10 GMT

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David Fanning writes:

```
>
> David Fanning writes:
>
>>
>> mankoff writes:
>>
>>> David: I've also tried using your GeoCoord object, and can display the
>>> graphic and coastlines just fine, but again, am stuck at the step of
>>> "convert (lon,lat)=(-100,-75) to (x,y) for indexing into the original
>>> TIF".
>>
>> mapCoord = GeoCoord('mygeotiff_file.tif')
>> mapStruct = mapCoord -> GetMapStructure()
>> xy = Map_Proj_Forward(lon,lat, Map_Structure=mapStruct)
>> x = xy[0]
>> y = xy[1]
>
> Oh, wait! You said you want to index into the original
> image. (My son is bugging me about bying a car today,
> so I'm distracted. :-)
>
> In addition to the above, I would do this.
>
> mapCoord -> GetProperty, XRANGE=xr, YRANGE=xy
> s = Size(image, /Dimensions)
> xvec = Scale_Vector(Findgen(s[0]), xr[0], xr[1])
> xindex = Value_Locate(xvec, x)
> yvec = Scale_Vector(Findgen(s[1]), yr[0], yr[1])
```

```
> yindex = Value_Locate(yvec, y)
>
> Then,
>
> Print, image[xindex, yindex]
```

Geez! Be sure to type that code with one eye closed!
I have to go look at cars. If you can't figure it out,
I do it right when I return. :-)

Cheers,

David

--

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