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Subject: Re: get LAT/LON from georef image  
Posted by [David Fanning](#) on Wed, 11 Feb 2009 13:43:17 GMT  
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titan writes:

> Hello! I have a georef image and I would like to extract the LAT and  
> LON values from it.

Here is an article that explains how I would do it:

[http://www.dfanning.com/map\\_tips/pixel\\_to\\_ll.html](http://www.dfanning.com/map_tips/pixel_to_ll.html)

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.")

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Subject: Re: get LAT/LON from georef image  
Posted by [Jean H.](#) on Wed, 11 Feb 2009 13:43:56 GMT  
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titan wrote:

> Hello! I have a georef image and I would like to extract the LAT and  
> LON values from it.  
> the dims of my image are not equal, let's say [65,80].  
> I create two vectors to be associated with the x\_pixel and y\_pixel of  
> the image  
>  
> x\_pixel=indgen(65)  
> y\_pixel=indgen(80)  
>  
> I know that there is the envi routine ENVI\_CONVERT\_FILE\_COORDINATES to  
> convert X and Y pixel coordinates into their corresponding X and Ymap  
> coordinates and vice-versa.  
>  
> Unfortunately it seems to work only if the lat and lon array are of  
> the same dimension in fact if we consider this example I should write  
>  
> envi\_convert\_file\_coordinates, fid, x\_pixel, y\_pixel, xmap, ymap, /  
> to\_map  
>  
> in this way I should have the respective vector xmap and ymap of lat

> and lon  
> but if I write  
>  
> help, xmap  
> help, ymap  
>  
> I get  
>  
> LAT\_MAP        DOUBLE    = Array[65]  
> LON\_MAP        DOUBLE    = Array[65]  
>  
> two vector of the same dims (in this case 65) and one of 65 elements  
> and the other with 80 elements  
>  
> Could someone tell me where I'm wrong??Are there any methods to  
> overpass this problem??  
> thanks

Titan,

yes, this is normal. x\_pixel and y\_pixel represent the XY pairs of coordinates... I am not too sure of what you are trying to extract exactly, but the idea is to create, in pixel index, the coordinates of your points of interests.

So, if you want to have the coordinates of the 1st line of pixels, you would have:

```
X_pixel = indgen(65) ; 0,1,2,3,...  
Y_pixels = intarr(65) ; 0,0,0,0,...
```

So the pairs are [0,0],[1,0],[2,0] ....

If you want to have the coords of the first column, do

```
X_pixel = intarr(85)  
Y_pixels = indgen(85)
```

And if you want the coord of every pixels,

```
X_pixels = rebin(indgen(65),65*85) ;0*85 times, 1*85 times etc  
Y_pixels = reform(rebin(indgen(85),85,65),85*65) ;0 to 85, * 65 times
```

Jean

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Subject: Re: get LAT/LON from georef image  
Posted by [titan](#) on Wed, 11 Feb 2009 18:58:48 GMT  
[View Forum Message](#) <> [Reply to Message](#)

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On 11 Feb, 14:43, David Fanning <n...@dfanning.com> wrote:

```
> titan writes:
>> Hello! I have a georef image and I would like to extract the LAT and
>> LON values from it.
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> Here is an article that explains how I would do it:
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> http://www.dfanning.com/map\_tips/pixel\_to\_ll.html
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> Cheers,
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> 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.")
```

Could this article be used even if my image is not a GEOTIFF image?  
thanks

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Subject: Re: get LAT/LON from georef image  
Posted by [titan](#) on Wed, 11 Feb 2009 19:02:33 GMT  
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On 11 Feb, 14:43, "Jean H." <jghas...@DELTHIS.ucalgary.ANDTHIS.ca> wrote:

```
> titan wrote:
>> Hello! I have a georef image and I would like to extract the LAT and
>> LON values from it.
>> the dims of my image are not equal, let's say [65,80].
>> I create two vectors to be associated with the x_pixel and y_pixel of
>> the image
>
>> x_pixel=indgen(65)
>> y_pixel=indgen(80)
>
>> I know that there is the envi routine ENVI_CONVERT_FILE_COORDINATES to
>> convert X and Y pixel coordinates into their corresponding X and Ymap
>> coordinates and vice-versa.
>
>> Unfortunately it seems to work only if the lat and lon array are of
>> the same dimension in fact if we consider this example I should write
>
>> envi_convert_file_coordinates, fid, x_pixel, y_pixel, xmap, ymap, /
>> to_map
>
```

```

>> in this way I should have the respective vector xmap and ymap of lat
>> and lon
>> but if I write
>
>> help, xmap
>> help, ymap
>
>> I get
>
>> LAT_MAP      DOUBLE   = Array[65]
>> LON_MAP      DOUBLE   = Array[65]
>
>> two vector of the same dims (in this case 65) and one of 65 elements
>> and the other with 80 elements
>
>> Could someone tell me where I'm wrong??Are there any methods to
>> overpass this problem??
>> thanks
>
> Titan,
>
> yes, this is normal. x_pixel and y_pixel represent the XY pairs of
> coordinates... I am not too sure of what you are trying to extract
> exactly, but the idea is to create, in pixel index, the coordinates of
> your points of interests.
>
> So, if you want to have the coordinates of the 1st line of pixels, you
> would have:
> X_pixel = indgen(65) ; 0,1,2,3,...
> Y_pixels = intarr(65) ; 0,0,0,0,...
>
> So the pairs are [0,0],[1,0],[2,0] ....
>
> If you want to have the coords of the first column, do
> X_pixel = intarr(85)
> Y_pixels = indgen(85)
>
> And if you want the coord of every pixels,
>
> X_pixels = rebin(indgen(65),65*85) ;0*85 times, 1*85 times etc
> Y_pixels = reform(rebin(indgen(85),85,65),85*65) ;0 to 85, * 65 times
>
> Jean

```

What I would like to do is to obtain the vector of lat and lon of my image in order to create an HDF image of the same dims and with the data of lat and lon associated

thanks

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Subject: Re: get LAT/LON from georef image  
Posted by [David Fanning](#) on Wed, 11 Feb 2009 19:08:26 GMT  
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titan writes:

> Could this article be used even if my image is not e GEOTIFF image?

If you have map projection information, and you know  
the location of one corner (or center, I guess) of  
your image, yes.

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.")

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Subject: Re: get LAT/LON from georef image  
Posted by [titan](#) on Thu, 12 Feb 2009 10:03:51 GMT  
[View Forum Message](#) <> [Reply to Message](#)

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On Feb 11, 8:08 pm, David Fanning <n...@dfanning.com> wrote:

> titan writes:  
>> Could this article be used even if my image is not e GEOTIFF image?  
>  
> If you have map projection information, and you know  
> the location of one corner (or center, I guess) of  
> your image, yes.  
>  
> 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.")

I have another idea and I would like to know if you think it's

correct.

Considering the answer of Jean H. I realize that I could still use the ENVI routine ENVI\_CONVERT\_FILE\_COORDINATES but in an "handcrafted" way:

```
;; transform the number of sample and line in integer value
```

```
ns_int = fix(img_ns) ;lat
nl_int = fix(img_nl) ;lon
```

```
;; Jean H. suggests that every pixel should be defined by a couple of
values so I have to determine who between ns_int and nl_int is the
biggest value
```

```
IF (ns_int GT nl_int) THEN BEGIN
```

```
;; once the higher value has been defined, I could create two vector
of the same length
```

```
  x_coord=indgen(fix(img_ns))
  y_coord=indgen(fix(img_ns))
```

```
;; and now I can use the ENVI routine
```

```
ENVI_CONVERT_FILE_COORDINATES,img_fid_open,x_coord,y_coord,l at_map,lon_map,/
TO_MAP
```

```
;; in order to obtain the correct dims again and knowing that, in this
case, vector of ns (lat) is bigger than the vector of nl (lon) I have
to cut this one to its original dimension
```

```
  lon_map=lat_map[0:img_nl-1]
```

```
;; if, on the contrary, integer value of nl (lon) is bigger than the
the one of ns (lat)
```

```
;; the procedure considers two vectors of the same dims vector of ns
has
```

```
ENDIF ELSE BEGIN
```

```
  IF (nl_int GT ns_int) THEN $
```

```
    x_coord=indgen(fix(img_nl))
    y_coord=indgen(fix(img_nl))
```

```
ENVI_CONVERT_FILE_COORDINATES,img_fid_open,x_coord,y_coord,l at_map,lon_map,/
TO_MAP
```

```
;; and now the vector to be cut is the one of latitude
```

```
  lat_map=lat_map[0:img_ns-1]
```

```
ENDELSE
```

```
;; finally we have the two vector of lat and lon and we can also can
create a matrix of lat lon with the same dims of our image
```

```
matrix_coord=dblarr(fix(img_ns),fix(img_nl))
matrix_coord = [lat_map,lon_map]
```

David or Jean H. what do you think about this procedure?

thanks

---

Subject: Re: get LAT/LON from georef image  
Posted by [Jean H.](#) on Mon, 16 Feb 2009 16:13:40 GMT  
[View Forum Message](#) <> [Reply to Message](#)

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```
> I have another idea and I would like to know if you think it's
> correct.
> Considering the answer of Jean H. I realize that I could still use the
> ENVI routine ENVI_CONVERT_FILE_COORDINATES but in an "handcrafted"
> way:
>
> ;; transform the number of sample and line in integer value
>
> ns_int = fix(img_ns) ;lat
> nl_int = fix(img_nl) ;lon
>
> ;; Jean H. suggests that every pixel should be defined by a couple of
> values so I have to determine who between ns_int and nl_int is the
> biggest value
> IF (ns_int GT nl_int) THEN BEGIN
> ;; once the higher value has been defined, I could create two vector
> of the same length
>     x_coord=indgen(fix(img_ns))
>     y_coord=indgen(fix(img_ns))
> ;; and now I can use the ENVI routine
>
> ENVI_CONVERT_FILE_COORDINATES,img_fid_open,x_coord,y_coord,l at_map,lon_map,/
> TO_MAP
> ;; in order to obtain the correct dims again and knowing that, in this
> case, vector of ns (lat) is bigger than the vector of nl (lon) I have
> to cut this one to its original dimension
>     lon_map=lat_map[0:img_nl-1]
> ;; if, on the contrary, integer value of nl (lon) is bigger than the
> the one of ns (lat)
> ;; the procedure considers two vectors of the same dims vector of ns
> has
>     ENDIF ELSE BEGIN
>         IF (nl_int GT ns_int) THEN $
>             x_coord=indgen(fix(img_nl))
>             y_coord=indgen(fix(img_nl))
>
> ENVI_CONVERT_FILE_COORDINATES,img_fid_open,x_coord,y_coord,l at_map,lon_map,/
> TO_MAP
> ;; and now the vector to be cut is the one of latitude
>     lat_map=lat_map[0:img_ns-1]
```

```
> ENDELSE
> ;; finally we have the two vector of lat and lon and we can also can
> create a matrix of lat lon with the same dims of our image
>
> matrix_coord=dblarr(fix(img_ns),fix(img_nl))
> matrix_coord = [lat_map,lon_map]
>
> David or Jean H. what do you think about this procedure?
> thanks
>
> Bartolomeo (alias Titan)
```

Bartolomeo,  
Sorry for the delay in the answer... I just recovered from the flu!  
Ok, so there are several conceptional errors in your text.

By doing `x_coord=y_coord=indgen(img_ns)`, you would be getting the coordinate of a 45degrees line starting at pixel 0;0, until the line touch the other side of the image (the diagonal of the image is the image is a square). I doubt this information can be of any help. (see below)

You do:  
`matrix_coord=dblarr(fix(img_ns),fix(img_nl))`  
`matrix_coord = [lat_map,lon_map]`

This would not work, for a conceptual reason: what makes you believe that the pixel size, in degrees, is the same at the top and at the bottom of your image? or, seen with a different view, that the extent of your image (again, in degrees, not in meters) is the same at the top and the bottom of your image?

If you want to have every pixel coord, you must built the X.Y coordinates of every pixels as I did in my previous post.

Jean

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Subject: Re: get LAT/LON from georef image  
Posted by [titan](#) on Thu, 19 Feb 2009 07:57:26 GMT  
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Thank you for the answer Jean.  
probably I have to study more your suggestion because  
I tried it but what I get are two vectors with a bigger dimension than  
the initial one!  
is it possible or am I doing something wrong?

thank you

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