## Subject: Re: how to make lat/long grid for MODIS in IDL Posted by dm\_gty88 on Thu, 14 Nov 2013 00:30:40 GMT

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Thanks for the reply! I've tried to do it but to no avail. Here's the code I used:

```
; Opens the file
fileID = HDF_SD_START('MOD09A1.A2002081.h29v07.005.2007136054406.hdf', /read)
index1 = HDF SD NAMETOINDEX(fileID, 'sur refl b01')
dataset1 = HDF_SD_SELECT(fileID, index1)
HDF SD GETDATA, dataset1, data1
HDF SD ENDACCESS, dataset1
; Reverses the file to make it upright
data1r = reverse(data1, 2)
: Setup map projection
smap = MAP_PROJ_INIT('Sinusoidal', LIMIT=[10,111.6969,20,127.7102])
; Forward transform
fmap = MAP_PROJ_FORWARD(data1r, MAP_STRUCTURE=smap)
When I print, fmap all I get is an array of zeroes.
On Wednesday, October 30, 2013 8:53:19 PM UTC+8, David Fanning wrote:
> dm_gty88 writes:
>
>
>
>> Just for an example, using the file in http://www.idlcoyote.com/map_tips/warptomap.php, I
have only peruimage. I want to generate peru lat and peru lon. How would I do that?
>
>
If you just have an image, you are hosed. But, suppose you have an image
  and the lat/lon of the four corner pixels and you know the map
>
>
  projection the image is in. Then, you are golden!
>
>
  Imagine an image printed on a piece of paper. Then, imagine you have a
>
  piece of screen left over from when you repaired the front bedroom
>
>
> window. By an unbelievable coincidence, the grid of the screen is just
>
```

exactly the size of one image pixel. > > > > Lay the screen down over the image, and overlay the screen grid so that > the edges of the grid are parallel to the sides of the image. Now, > > rotate both the paper with the image on it, and the screen that is > aligned to the image so that the sides of the image are vertical from > \*your\* perspective. Move them both together, don't change the alignment > > you had already established between the image paper and the screen. > > > What you are looking at now, is a projected meter rectangular grid > overlaying your image. Each grid cell in the screen is overlayed exactly on an image pixel. > > Now, set up your map projection with Map\_Proj\_Init (or, I would use cgMap, because I like to do things the easy way). Take your corner pixel > lat/lon values and forward transform them into projected meter space. > Take these numbers and label the paper with the image on it. Draw some > axes while you are at it along the left and bottom of the image. > > When you are finished, take your pen and connect the four corner pixels in clockwise order. You are looking, are you not, at a rectangular box in a XY coordinate system. And, you know the values of all four corners > of the box. If you remember fourth grade math at all, it should be > > possible to figure how how to assign [x,y] position values to each of

>

```
the screen grid cells inside the rectangle, given that you know
  *exactly* how many of them there are. If you don't, ask the image how
>
> big it is.
>
  Each pixel now has a "location" in the XY grid. But, you want each
  pixel's "location" in latitude and longitude. Simply take your handy-
>
  dandy map projection object or function and *inverse* transform those XY
>
>
  locations back to latitude/longitude locations.
>
>
> Whala! Finished!
>
>
> 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.")
```