Subject: Map Projection Conversion in ENVI
Posted by David Fanning on Wed, 17 Jun 2009 22:49:08 GMT
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Folks,

OK, I am at wit's end here.

I have opened a MISR image in ENVI. I've used blocks 10-35, so this image is roughly over the Arctic Ocean. The image is georeferenced to a Space Oblique Mercator map projection. All well and good. The image runs through (and extends outside) a rectangular grid I am using for a study area.

I now wish to convert this image to a Lambert's Equal Area projection, using a particular 500m grid that represents my study area. (The original data is on a 275m grid.) I can successfully use the Convert Map Projection selection from under the Map menu to do this. I select the new projection, give it the map coordinates (in my grid) of the (0,0) pixel in the image (-1440000.0 and 2310537.95), specify the output pixel sizes (500 m in both directions), give it the dimensions of my output image (5760 by 4800), and tell it to do a rigorous nearest neighbor regridding. ENVI does its thing, and it works great. I'm happy.

But setting all this map conversion malarkey up is labor intensive, and I would like to avoid it, since I have a rather goodly number of images and I have no wish to spend a week or so in this mindless and mind-numbing behavior.

So I wrote an ENVI batch file (where I ran into the afore-mentioned "array dimension zero" problem) and off ENVI goes, but this time using Envi_Convert_File_Map_Projection.

```
mapStruct = Envi_Proj_Create(TYPE=36, NAME='fanningStudy', $
   PARAMS=[6370997.0D, 90.0, 0.0, 0.0, 0.0])
Envi_Convert_File_Map_projection, DIMS=dims, R_FID=fID, $
   O_PIXEL_SIZE=[500,500], OUT_BNAME=bnames, OUT_NAME=out_name, $
   O_PROJ=mapStruct, RESAMPLING=0, WARP_METHOD=3, POS=[0,1,2,3]
```

It actually seems to warp the image correctly. Except that my output is not 5760 x 4800. It is 7993 x 5668. And the map coordinates of the (0,0) pixel are -2340960 and 2213641, not -1440000 and 2310538. It appears as though the *entire* original image has been mapped to the new projection

but not clipped to my actual grid area as it was when
I did the conversion manually.

Does anyone know how I can confine the image to just that
part of the map projection I am interested in? Any image
pixels outside the region I am happy to throw away.

In other words, I need some way to tell my image that I am
only interested in pixels that start (in X) at -1440000
and that start in Y at 2310538 -(4800*500).

I see there is a Envi_Map_Info_Create routine that allows
me to actually use these numbers, but I don't see how to
use such a thing during the map conversion:

```
  mapInfo = Envi_Map_Info_Create(PROJ=mapStruct, $
     MC=[0d, 0d, -1440000.0d, 2310537.95d], $
     PS=[5760,4800], NAME='fanningStudy')
```

Ideas certainly appreciated. :-)

Cheers,

David
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Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")
