Subject: Re: Inverse Map Projection Help
Posted by David Fanning on Wed, 27 Feb 2008 04:56:54 GMT
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mankoff writes:

> And the actual one I've started with is:
> http://www.antarctica.ac.uk/bas_research/data/access/bedmap/ download/surface=
> .asc.gz

Well, I just basically moved the corners over to the image
edges, which is what IDL requires, and I get what I think
is a pretty darn good fit. Here is the code I used:

```
pro load_asc, file, data0, data1, img
  if not keyword_set(file) then begin
     print, 'bathy, bedelev, groundbed, icethic, surface, water'
     return
  end
  result =  read_ascii(file+'.asc',data_start= 6)
  data0 =  result.field0001
  bad =  where( data0 eq -9999, complement= good )
  data1 =  data0 & data1[bad] =  !values.f_nan
  mm =  [Min(data0[good]) , Max(data0[good])]
  img =  bytscl( data1, min= mm[0], max= mm[1], top= 253 ) + 1
  img[ bad ] =  0
end

load_asc, 'surface', d1, d2, data
data =  reverse(data,2)
s = Size(data, /Dimensions)

x0     =  -2713600 -2500        ; from data set header
y0     =  -2304000 -2500
x1 = s[0]*5000 + x0 + 2500
y1 = s[1]*5000 + y0 + 2500
xx =  [x0,x0,x1,x1]        ; the four corners
yy =  [y0,y1,y1,y0]

;; this is the projection the data is distributed on
stereo =  map_proj_init(106, DATUM= 8, $
      CENTER_LONGITUDE= 0, CENTER_LATITUDE= -71 )
lonlat =  MAP_PROJ_INVERSE( xx, yy, MAP_STRUCTURE= stereo )
longitude =  reform(lonlat[0,*])
latitude =  reform(lonlat[1,*])

;; output zoom
limit = [ -90, -180, max(latitude), 180 ]
```

```
;; this is the projection I would like it on
cyl =  map_proj_init('Cylindrical', limit= limit)
range =  [ x0, y0, x1, y1 ]
warp =  MAP_PROJ_IMAGE( data, range, $
                  image_structure=  stereo, $ ;; input
                  map_structure =  cyl, $     ;; output
                  missing =  -2, $
                  uvrange =  uvrange, $
                  min_value =  0, $
                  _EXTRA= e )

erase
window, xsize=s[0], ysize=s[1]
TV, BytScl(warp)

pos =  [0,0,1,1]
;; Pick one. Which one?
;uv_box =  cyl.uv_box
uv_box =  uvrange

Plot, uv_box[[0, 2]], uv_box[[1, 3]], Position= pos, $
     /Nodata, XStyle= 5, YStyle= 5, /NoErase

MAP_CONTINENTS, Map_Structure= cyl, /HIRES
map_grid, glinest= 0, color= 255, /label, map_structure= cyl

end
```

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