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Subject: Map spanning Dateline?

Posted by [John Kwiatkowski](#) on Tue, 02 Feb 1999 08:00:00 GMT

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I can't figure out how to draw a map that spans the International Dateline, i.e., the meridian where longitude is 180 (or -180).

If I go right up to the dateline but not over it, I get a nice map including Japan:

```
map_set,/grid, /continent,limit = [0,100,50,180]
```

However, if I cross the dateline I get some gridlines but no Japan:

```
map_set,/grid, /continent,limit = [0,100,50,-160]
```

If I use the limit keyword with 8 elements, either

```
map_set,/grid, /continent,limit = [50,100,50,-160,0,-160,0,100] or
```

```
map_set,/grid, /continent,limit = [0,100,50,100,50,-160,0,-160]
```

I get a blank window.

Also, I can't seem to get the limit (4 element) keyword to behave.

For example , if I want a map of Florida limit =[20,-88,30,-80]

```
map_set,limit=[20,-88,30,-80],/cont,/label
```

I get a map from 20 to 26 lat and -88 to -82 lon. How can I force it to listen to my limits?

Thanks for any help,  
John Kwiatkowski

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Subject: Re: Map spanning Dateline?

Posted by [Charlotte DeMott](#) on Wed, 03 Feb 1999 08:00:00 GMT

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How about this example:

```
map_set, 0, 180, limit=[-20,0,20,360]
```

so far so good, but how do i get latitude labels to appear to the LEFT of the map? Setting latlab=-20, causes the labels to appear at 340 degrees (IN the map, near the rhs).

charlotte

Martin Schultz wrote:

> You'll need to set the map origin somewhere within your LIMITs and make

> sure that limit is monotonically increasing. Example:  
>  
> map\_set,0,175,limit=[-50,140,50,210]  
>  
> that should work.  
>  
> BTW: If you are planning to overlay contours on your map: make sure your  
> data is sorted correctly and within your map range. This has caused so  
> much trouble already ...  
>  
> Martin.  
>

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Subject: Re: Map spanning Dateline?

Posted by [Martin Schultz](#) on Wed, 03 Feb 1999 08:00:00 GMT

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John Kwiatkowski wrote:

>  
> I can't figure out how to draw a map that spans the International  
> Dateline, i.e., the meridian where longitude is 180 (or -180).  
>  
> If I go right up to the dateline but not over it, I get a nice map  
> including Japan:  
> map\_set,/grid, /continent,limit = [0,100,50,180]  
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> However, if I cross the dateline I get some gridlines but no Japan:  
> map\_set,/grid, /continent,limit = [0,100,50,-160]  
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> If I use the limit keyword with 8 elements, either  
> map\_set,/grid, /continent,limit = [50,100,50,-160,0,-160,0,100] or  
> map\_set,/grid, /continent,limit = [0,100,50,100,50,-160,0,-160]  
> I get a blank window.  
>  
> Also, I can't seem to get the limit (4 element) keyword to behave.  
> For example , if I want a map of Florida limit =[20,-88,30,-80]  
> map\_set,limit=[20,-88,30,-80],/cont,/label  
>  
> I get a map from 20 to 26 lat and -88 to -82 lon. How can I force it  
> to listen to my limits?  
>  
> Thanks for any help,  
> John Kwiatkowski

Oh yeah! My fun subject ;-)

You'll need to set the map origin somewhere within your LIMITs and make

sure that limit is monotonically increasing. Example:

```
map_set,0,175,limit=[-50,140,50,210]
```

that should work.

BTW: If you are planning to overlay contours on your map: make sure your data is sorted correctly and within your map range. This has caused so much trouble already ...

Martin.

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Subject: Re: Map spanning Dateline?  
Posted by [Martin Schultz](#) on Thu, 04 Feb 1999 08:00:00 GMT  
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Charlotte DeMott wrote:

>  
> How about this example:  
>  
> map\_set, 0, 180, limit=[-20,0,20,360]  
>  
> so far so good, but how do i get latitude labels to appear to the LEFT of  
> the map? Setting latlab=-20, causes the labels to appear at 340 degrees  
> (IN the map, near the rhs).  
>  
> charlotte  
>

yes, that \*is\* cumbersome. I attach a little routine that will take care of your labelling issues. The basic idea is to use XYOUTS. Once you are there, you can

then really spruce your maps up quite a bit. As an example, I add a degree symbol...

Hope this helps,  
Martin.

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```
function get_gridspacing,range,delta=delta,n=n

; return 5, 10, 15, 30 depending on range

dist = range[1]-range[0]
if (dist gt 120.) then delta = 30. $
else if (dist gt 80.) then delta = 15. $
else if (dist gt 45.) then delta = 10. $
else delta = 5.

; set up mega grid and truncate to actual range
; range shouldn't exceed -180 or +720 in any case
; therefore we start with a grid of 900/5 = 150 entries
grid = findgen(150)*delta - 180.

keep = where(grid ge range[0] AND grid le range[1])
if (keep[0] eq -1) then message,'Invalid parameters for grid!'

grid = grid[keep]
n = n_elements(keep)

return,grid
end

pro map_labels,lonrange=lonrange,latrange=latrange

if (n_elements(latrange) ne 2) then latrange = [ -90., 90. ]
```

```

if (n_elements(lonrange) ne 2) then lonrange = [ -180., 180. ]

center = [ total(latrange)/2., total(lonrange)/2. ]

map_set,center[0],center[1], $
    limit=[latrange[0],lonrange[0],latrange[1],lonrange[1]], $
    color=1,position=[0.2,0.3,0.9,0.8],/continents

; degree symbol
deg = '!Uo!N'

; compute grid lines
lats = get_gridspacing(latrange,n=nlat)
lons = get_gridspacing(lonrange,n=nlon)

map_grid,color=1,lats=lats,lons=lons

; convert to normal coordinates for labeling
; norm... will be 3 dimensional arrays. 1st coordinate is
; longitude, 2nd is latitude. For lats, the longitude is at
; the left of the plot, for lons, the latitude is on the bottom
; Thus, it's easy to use this information for xyouts

dumlat = fttarr(nlon) + latrange[0]
dumlon = fttarr(nlat) + lonrange[0]
normlats = convert_coord(dumlon,lats,/DATA,/TO_NORMAL)
normlons = convert_coord(lons,dumlat,/DATA,/TO_NORMAL)

charheight=0.005 ; estimated

xyouts,normlats[0,*]-0.018,normlats[1,*]-charheight, $
    strtrim(string(lats,format='(I5)'),2)+deg,/NORM, $
    align=1.,color=1

xyouts,normlons[0,*],normlons[1,*]-0.025, $
    strtrim(string(lons,format='(I5)'),2)+deg,/NORM, $
    align=0.5,color=1

return
end

```

## File Attachments

1) [map\\_labels.pro](#), downloaded 120 times

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