
Subject: Re: Overlay images from WMS servers (web mapping servers) on map projections

Posted by [David Fanning](#) on Wed, 08 Feb 2006 14:11:29 GMT

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Jan Kristian Jensen writes:

```
> Then the easiest thing would be to open a window with the exact same
> size, call map_set with the appropriate projection and display the
> image. Something like this:
>
> --- Example - you have to provide the wms file yourself ... -
>
> ; Limit = boundingBox coordinates to WMS server
> limit = [ 59.5, 3.5, 61.0, 5.2]
> map_set, 0, 0, /cylindrical, xmargin = 0, ymargin = 0, limit = limit
```

Whenever I've had to solve this problem, I use POSITION-[0,0,1,1] instead of the [XY]Margin keywords. I'd try that and see if it helps. Also, and probably more importantly, I would make sure your latcenter and loncenter are in the center of your limits. They aren't, currently.

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Subject: Re: Overlay images from WMS servers (web mapping servers) on map projections

Posted by [liamgumley](#) on Wed, 08 Feb 2006 15:31:18 GMT

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Jan,

I encourage you to pursue the MAP_PROJ_INIT solution, since it is much more robust than MAP_SET. I'm not familiar with the projection you mention, but here is how I create a UTM projection to match up with a GeoTIFF image:

```
; Create graphics window
window, /free, xsize=600, ysize=800
```

```
; Define map projection
map = map_proj_init('UTM', limit=[10.15, -78.77, 29.87, -95.29],
zone=16)

; Configure direct graphics data coordinates to match map projection
plot, map.uv_box[[0, 2]], map.uv_box[[1, 3]], position=[0.0, 0.0, 1.0,
1.0], $
  /nodata, /isotropic, xstyle=5, ystyle=5, /noerase

;- Plot continent outlines
map_continents, map=map
```

Cheers,
Liam.
Practical IDL Programming
<http://www.gumley.com/>

Subject: Re: Overlay images from WMS servers (web mapping servers) on map projections

Posted by [David Fanning](#) on Wed, 08 Feb 2006 15:41:25 GMT

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liamgumley@gmail.com writes:

```
> I encourage you to pursue the MAP_PROJ_INIT solution, since it is much
> more robust than MAP_SET. I'm not familiar with the projection you
> mention, but here is how I create a UTM projection to match up with a
> GeoTIFF image:
>
> ; Create graphics window
> window, /free, xsize=600, ysize=800
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> ; Define map projection
> map = map_proj_init('UTM', limit=[10.15, -78.77, 29.87, -95.29],
> zone=16)
>
> ; Configure direct graphics data coordinates to match map projection
> plot, map.uv_box[[0, 2]], map.uv_box[[1, 3]], position=[0.0, 0.0, 1.0,
> 1.0], $
>   /nodata, /isotropic, xstyle=5, ystyle=5, /noerase
>
> ;- Plot continent outlines
> map_continents, map=map
```

I'm not sure "robust" is the word I was using the other day, Liam, when I tried to create a MAP_PROJ_INIT projection *other* than this one for the GSHHS article I was writing.

I absolutely cannot figure out how this projection space works. The documentation, as far as I can tell, is hopeless. I presume you have to look elsewhere to figure out how it works. But I haven't found the right place yet.

I wanted a map projection of the Great Lakes Region of the US, positioned in the window according to a POSITION keyword. It seems straightforward, but a couple of hours of work got me exactly nowhere. :-)

Can you show me how you would do this robustly? :-)

Cheers,

David

P.S. I think the word I was using had four letters instead of five. :-)

--

David Fanning, Ph.D.

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Subject: Re: Overlay images from WMS servers (web mapping servers) on map projections

Posted by [James Kuyper](#) on Wed, 08 Feb 2006 17:33:46 GMT

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Jan Kristian Jensen wrote:

...

```
> ; Limit = boundingBox coordinates to WMS server
> limit = [ 59.5, 3.5, 61.0, 5.2]
> map_set, 0, 0, /cylindrical, xmargin = 0, ymargin = 0, limit = limit
>
>
> wmsimage = read_png( filename, r, g, b)
> tvlct, r, g, b
> window, xsize = 1200, ysize = 1000
> tv, wmsimage
```

MAP_SET sets up a projection fitted to the current window, creating one with default settings if there isn't one already current. Therefore, you need to move your map_set call after your call to WINDOW, in order for the map projection to be appropriate.

Subject: Re: Overlay images from WMS servers (web mapping servers) on map projections

Posted by [Jan Kristian Jensen](#) on Wed, 08 Feb 2006 19:01:52 GMT

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kuyper@wizard.net wrote:

> Jan Kristian Jensen wrote:

[...]

>> map_set, 0, 0, /cylindrical, xmargin = 0, ymargin = 0, limit = limit

[...]

>> window, xsize = 1200, ysize = 1000

[...]

> MAP_SET sets up a projection fitted to the current window, creating one
> with default settings if there isn't one already current. Therefore,
> you need to move your map_set call after your call to WINDOW, in order
> for the map projection to be appropriate.

You are absolutely right - and I'm sorry i messed up the order of these two commands when posting.

Jan

--

Jan Kristian Jensen

Remove the obvious from the email adress to email me.

Subject: Re: Overlay images from WMS servers (web mapping servers) on map projections

Posted by [Jan Kristian Jensen](#) on Wed, 08 Feb 2006 19:55:30 GMT

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David Fanning wrote:

> Jan Kristian Jensen writes:

>> map_set, 0, 0, /cylindrical, xmargin = 0, ymargin = 0, limit = limit

>

>

> Whenever I've had to solve this problem, I use POSITION-[0,0,1,1]
> instead if the [XY]Margin keywords. I'd try that and see
> if it helps.

Nope - same problem as before. At least the /noborder, x/ymargin and position seems to behave consistently (but maybe not the way I hope for)

Also, and probably more importantly, I would
> make sure your latcenter and loncenter are in the center
> of you limits. They aren't, currently.

I've played around with different values for p0Lat, p0Lon. Changing them has no visible effect whatsoever - at least not at this scale. The mismatch looks about the same.

From this group I understand that setting p0Lat, p0lon correctly often is crucial, probably because many projection demands that you specify some point of origin (central meridian or similar) for your map. This particular projection demands that the central meridian is zero, hence p0lat = 0.

The EPSG:4326 is probably the simplest projection available, and has many names: Equidistant lat/lon grid, equirectangular, rectangular projection, plane chart, plate carre, unprojected map, lat/lon grid... More formally, epsg:4326 is a special case of a cylindrical projection, defined by that the central meridian is zero.
<http://mathworld.wolfram.com/EquirectangularProjection.html>

According to the docs, this is the `_/default\*` projection used by `map_set` - and p0Lat, p0lon = 0 is the default value for these optional parameters.

Jan

--

Jan Kristian Jensen

Remove the obvious from the email adress to email me.

Subject: Re: Overlay images from WMS servers (web mapping servers) on map projections

Posted by [Jan Kristian Jensen](#) on Wed, 08 Feb 2006 22:34:18 GMT

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liamgumley@gmail.com wrote:

```
> Jan,  
>  
> I encourage you to pursue the MAP_PROJ_INIT solution
```

[...]

```
> ; Configure direct graphics data coordinates to match map projection  
> plot, map.uv_box[[0, 2]], map.uv_box[[1, 3]], position=[0.0, 0.0, 1.0,  
> 1.0], $  
> /nodata, /isotropic, xstyle=5, ystyle=5, /noerase
```

Thank you Liam, I have made some initial tests and this seems to work pretty well. This is probably the way to go for a generic solution.

For my particular projection (EPSG:4326) an even simpler approach may be used:

```
limit = [ 59.5, 3.5, 61.0, 5.2] ; BoundingBox of wms call
```

```
plot, [ limit[1], limit[3]], [ limit[0], limit[2]], $  
      position = [0.0, 0.0, 1.0,1.0], /nodata, xstyle=5, $  
      ystyle=5, /noerase
```

Using the isotropic keyword seems to be wrong when the image is not rectangular (which it very well could be - at your WMS server, a new image to your liking is only one getMap request away). Further, the x and y axis will typically not have the same spacing - I don't know if this also could be a problem. However, I recall some hints from this group about using /isotropic to get more predictable results from routines like plot.

Jan

(Still pretty annoyed of why the straightforward map_set solution didn't work...)

--

Jan Kristian Jensen

Remove the obvious from the email adress to email me.

Subject: Re: Overlay images from WMS servers (web mapping servers) on map projections

Posted by [David Fanning](#) on Fri, 10 Feb 2006 12:18:32 GMT

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David Fanning writes:

- > I absolutely cannot figure out how this projection space works.
- > The documentation, as far as I can tell, is hopeless. I presume
- > you have to look elsewhere to figure out how it works. But
- > I haven't found the right place yet.
- >
- > I wanted a map projection of the Great Lakes Region of the US,
- > positioned in the window according to a POSITION keyword. It
- > seems straightforward, but a couple of hours of work got me
- > exactly nowhere. :-(
- >
- > Can you show me how you would do this robustly? :-)

Nothing!? No takers?

Humm. MAP_PROJ_INIT must be less robust than even I imagined. :-)

Cheers,

David

P.S. How about pointers to a good map projection page?

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

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