
Subject: Re: How to plot shaded relief image
Posted by [David Fanning](#) on Fri, 04 Jan 2008 14:52:16 GMT
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Dave writes:

> How to use IDL to plot shaded relief image, just like
> <http://denali.gsfc.nasa.gov/gridview/index.html>? Thanks very much!

1. Download the GRIDVIEW application.
2. Download a GRID.

Otherwise, you could take your topographic data and drape another dataset over the top of it as a texture map:

http://www.dfanning.com/ographics_tips/imgtex.html

Cheers,

David

--

David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: <http://www.dfanning.com/>
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: How to plot shaded relief image
Posted by [Dave\[4\]](#) on Fri, 04 Jan 2008 15:12:26 GMT
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Dear david:

1) I have to do this without gridview, because gridview does not open it's code.

2) I have try the SHADE_SURF with top view, it's good. But I want to find a 2D way to do this.

Thanks for your reply!

Dave

On Jan 4, 10:52 pm, David Fanning <n...@dfanning.com> wrote:

> Dave writes:

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>> <http://denali.gsfc.nasa.gov/gridview/index.html>?Thanks very much!

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> David

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Subject: Re: How to plot shaded relief image

Posted by [David Fanning](#) on Fri, 04 Jan 2008 15:21:32 GMT

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Dave writes:

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> open it's code.

> 2) I have try the SHADE_SURF with top view, it's good. But I want
> to find a 2D way to do this.

Good luck! :-)

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

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Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: How to plot shaded relief image

Posted by [Rick Towler](#) on Fri, 04 Jan 2008 18:33:45 GMT

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Dave wrote:

> Dear david:

> 2) I have try the SHADE_SURF with top view, it's good. But I want
> to find a 2D way to do this.

I'm a little slow, but how can you do this in 2D? Don't you need to generate the shading from a 3D dataset and a light source?

-Rick

Subject: Re: How to plot shaded relief image

Posted by [JMB](#) on Wed, 09 Jan 2008 15:49:52 GMT

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> 1) I have to do this without gridview, because gridview does not
> open it's code.
> 2) I have try the SHADE_SURF with top view, it's good. But I want
> to find a 2D way to do this.

Hi Dave,

Did you already find a "2D" way ?

I tried this method that works pretty good to get a shaded relief from a digital elevation model (DEM).

- First you need to create a 3x3 matrix that represents the incident light with which you want to illuminate your DEM.
- Then you have to convolve your DEM with this matrix. You will get a kind of shading matrix.
- The last step consists in mixing your colorized DEM with this shading matrix (which you can stretch according to get the expected light/shadows contrast).

; Read the dem into the dem variable (NxM matrix)

```
dem=read_tiff('dem.tif')
```

; Edit a 3x3 matrix to represents the light

; in this example the light comes from the bottom (south)

```
light=[[1,1,1],[0,0,0],[-1,-1,-1]]
```

; convolution of the dem with the 3x3 matrix

```
shading=convol(float(dem),float(light))
```

then you have several ways to use your shading matrix to enhance your relief plot.

adding or multiplying the 3 channels of your colored dem with the stretched shading matrix.

I let you test...

Jérôme
