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 View Forum Message <> Reply to Message

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:
      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.
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> David Fanning, Ph.D.
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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 View Forum Message <> Reply to Message

## Dave writes:

- > 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.

Good luck! :-)

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 Rick Towler on Fri, 04 Jan 2008 18:33:45 GMT View Forum Message <> Reply to Message

## 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 View Forum Message <> Reply to Message

- > 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 a 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 to 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 multiplicating the 3 channels of your colored dem with the stretched shading matrix.

I let you test...

Jérôme