Subject: Re: linear-space image converted to log-space
Posted by jkj on Sun, 24 Feb 2008 03:33:36 GMT
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On Feb 23, 8:26 pm, "ben.bighair" <ben.bigh...@gmail.com> wrote:
> On Feb 23, 5:45 pm, jkj <ke...@vexona.com> wrote:
>
>
>
>> Hi,
>
>> I have a need to reproduce an image like this:
>
>> http://diamondhead.org/linear_logspace.png
>
>> beginning with data like this:
>
>> http://diamondhead.org/linear_linearspace.png
>
>> Using logarithmic scaling, the first image (produced by a custom
>> graphics package) expands lower frequency components while contracting
>> the higher frequency components. To do this in object graphics, I
>> believe I will have to reconstruct the image data so that the lower
>> frequency [the bottom] information is replicated according to a log
>> scaling scheme.
>
>> I can think of some [tortured] ways to do this but keep thinking there
>> must be some sophisticated way to handle this in IDL. Any thoughts
>> would be appreciated.
>
>> Thanks,
>> -Kevin
>
> Hi,
>
> I think I would use a flat filled IDLgrSurface that is projected as
> one might view an image - with a log scaled y axis. Then use the
> TEXTURE_MAP property to show the image data.
>
> The example below uses XOBJVIEW to show the same image twice. The
> bottom is "regular" and the top is stretched like in your example.
> Note that I had to stretch the second model so you can see the
> effect. I can't recall at this late hour how to get better control of
> that, but it can be done much better.
>
> Ben
>
> **BEGIN

```
>  rose = READ_IMAGE(FILEPATH('rose.jpg',
>  SUBDIRECTORY=['examples','data']))
>  dim = SIZE(rose,/DIM)
>  nx = dim[1] & ny = dim[2]
>  x = findgen(nx)+1
>  y = findgen(ny)+1
>  s = replicate(1,nx,ny)
>
>  ;the first surface is "regular"
>  o1 = OBJ_NEW("IDLgrSurface", s, x, y, $
>    color = [255,255,255], style = 2, $
>    texture_map = obj_new("IDLgrImage", rose))
>  model_1 = OBJ_NEW("IDLgrModel")
>  model_1->Add,o1
>  model_1->Translate, 0, -ny/2. - 10, 0
>
>  ;the second surface is log scale in y
>  o2 = OBJ_NEW("IDLgrSurface", s, x, alog10(y), $
>    color = [255,255,255], style = 2, $
>    texture_map = obj_new("IDLgrImage", rose))
>  model_2 = OBJ_NEW("IDLgrModel")
>  model_2->Add,o2
>  model_2->Scale, 1, 100, 1 ;<<<< cheat here to make effect big enough
>  to see
>  model_2->Translate, 0,ny/2. + 10, 0
>
>  xobjview, [model_1, model_2] , /BLOCK
>
>  OBJ_DESTROY, [model_1, model_2]
>  **END
```

My hero! :-)

Very gracious of you - thanks!
-Kevin
