Subject: Logarithmic Color Scaling
Posted by David Fanning on Tue, 05 Dec 2006 15:16:14 GMT
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Folks,

I'm embarrassed to admit this, but I spent the entire day yesterday working on a logarithmic color scaling problem and got absolutely nowhere. I was really counting on a breakthrough in the shower this morning, but no joy there, either. :-(

My dilemma is this. I can produce a log scaled image (using LOGSCL) and I can create a log scaled color table (again using LOGSCL with the method Lagos outlined yesterday). What I cannot do is associate a color on the color bar with the actual image value.

In other words, when I click on the image, I can read that value back from the image. The value of that pixel does not correspond to the color representing that value in the color table. In fact, it is not even close. It is so far off, in fact, that it makes me think there is something absolutely fundamental that I am not understanding about the problem.

I have thought about nothing else for 24 hours and can't see my way out of this problem. (Although a bulky furnace is going to demand some of my time today.) Has anyone EVER done this successfully? Could you show me a bit of code?

I want to show a data set with values extending over several decades with a logarithmic color bar. The data set I am using is this one:

```
image = FltArr(400, 400)
image[30:40, 30:40] = 10
image[50:60, 50:60] = 100
image[70:80, 70:80] = 1000
image[90:100, 90:100] = 2500
image[110:120, 110:120] = 3500
image[130:140, 130:140] = 5000
image[150:160, 150:160] = 7500
image[170:180, 170:180] = 10000
```

I can show this data set logarithmically scaled:

```
LoadCT, 33
TV, LogScl(image)
```

And I can even show the logarithmically scaled color values that accurately reflects the image values:

```
TVLCT, r, g, b, /GET
TVLCT, r[LogScl(index)], g[LogScl(index)], b[LogScl(index)]
Colorbar, range=[1,10000]
```

What I cannot show is a Colorbar with a logarithmic axis scale that accurately shows the image colors. :-(

```
Colorbar, Range=[1,10000], XLOG=1, XTICKS=0, MINOR=5
```

I am VERY open to ideas. :-)

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.")
