Subject: Re: Producing potable color images from IDL?
Posted by David Fanning on Sun, 24 Nov 2002 22:17:03 GMT
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Chris Mulliss (cmulliss@columbus.rr.com) writes:

> This is not strictly an IDL question, but here goes...
>
> When I produce 24-bit color images in IDL (running on a SUN) and try to
> display them on an SGI or Windows box, they tend to come out looking very
> dark.
>
> I have been told that it is probably a hardware-dependent gamma correction
> problem. I have been told also that the PNG image format has the ability to
> store the gamma value of the machine that the image was created so that the
> image can be "gamma corrected" on other platforms. IDL's help on PNG does
> not mention this feature and I have this problem with all file formats that
> I have tried including PNG.

I don't know anything about PNG storing the gamma correction,
but it doesn't appear IDL supports that feature, even if true.

> So, does anybody know what is going on? Has anyone found a way to make
> images in IDL that don't look dark on other platforms? Does anyone have a
> reference to the mathematical nature of this "gamma correction" so that I
> look into accounting for it in code.

The "gamma" correction is just the image value multiplied by
a constant and raised to some power. The "raised to the power"
part is called the "gamma". Gammas less than one (e.g. 0.25,
0.4, 0.76) will lighten an image and gammas greater than
one (e.g., 1.5, 2.75, 10) will darken it. Try something like
this:

```
filename = Findfile(Subdir='examples','data'], 'ctscan.dat')
image = BytArr(256, 256)
Openr, lun, filename, /Get_Lun
ReadU, lun, image
Free_lun, lun

LoadCT, 0
Window, XSize=512, YSize=256
TV, image
TV, BytScl(3 * image ^ 0.75), 1
```

In practice, you probably have to fool around with the
constant (3, in this case) and the gamma (0.75, in this
case), until you find something that works for your

monitors. Then, just multiply by this gamma "correction
factor" before you save your images.

Cheers,

David
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