Subject: Re: q: what is the role of color tables for true color images
Posted by Struan Gray on Wed, 25 Jun 1997 07:00:00 GMT
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Mirko Vukovic, mirko.vukovic@grc.varian.com writes:

> I have a P133, 16bit color card, win95 and idlV5.

I have Macs and PPC Macs with IDL4.01 and the 5.0 pre-release, so my experience may not be relevant.

> What do the color table settings have to do with
> display of images using
>
> tv,r,chan=1
> tv,g,chan=2
> tv,b,chan=3

They act as lookup tables. The intensity that ends up in the screen buffer is not [r(i,j), g(i,j), b(i,j)] but [table(r(i,j)), etc]. This means that you can do (crude) colour table animation and gamma correction but most of the time is a total pain in the arse. I don't know how IDL works around the colour table having less than 256 entries. In the IDL 4 paper manuals this was explitly stated in the chapter on IDL graphics devices, naturally enough in the section on the postscript device :-)

The only workaround I've found in direct graphics is to load colour table 0 before plotting, since the lookup still happens if you combine the rgb planes into a single 3-dimensional picture and use the TRUE keyword with TV.

> For that matter, can someone tell me how many bits are there in
> r,g,b in 16 bit displays?

On the Macs IDL behaves internally as if the display were 24 bit. That is, if you use TVRD() to read an 8-bits-per-channel image back from the display you don't get an image posterised to 5-bits. The posterisation does occur on the screen - as it must - and is obvious in things like greyscale images with smooth ramps.

Struan