Subject: Truthful colour tables
Posted by Justin[3] on Fri, 27 Aug 2004 16:59:13 GMT
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Hello all,

After plotting lots of spectra with the "rainbow" colour table it became clear to me that such a table hides much detail and over-emphasises some features.

Clearly this is not a new idea and hunting around I came across the excellent article "How NOT to Lie with Visualization": http://www.research.ibm.com/dx/proceedings/pravda/truevis.ht m. There was also a brief discussion in this group back in Feb of this year

After reading the article I tried to create such an "isomorphic" colour table (top-right in figure 1) myself in IDL. They describe the table as follows:

"In this colormap [colour table], luminance and saturation both increase monotonically with data value. That is, brightness increases monotonically and hue, which begins as a pure vivid blue, becomes more and more pastel."

The don't say the (monotonic) increase is linear so I'm guessing it's not. Also the values don't seem to start from zero either. And to add to the confusion they're talking about luminance rather than lightness used in the HLS colour space of IDL (though I think "brightness" is the same and "value" from the HSV model). Also they show an interesting blue/yellow map in Figure 2 (clearly with a non-linear and non-monotonic hue).I did try to download the PRAVDAcolor software mentioned but couldn't find all of it.

So (finally) my question is, does anyone know what these colour tables are and how the components vary? I don't mind creating the tables myself in IDL if I had a plot or description of the colour components. These guys have obviously put a lot of effort in the work so it would be a shame not to use it!

Thanks,

Justin