Subject: colour coded shaded relief DEM: go get 'm
Posted by Bob Janssen on Tue, 01 Aug 1995 07:00:00 GMT
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I recently posted a query to this newsgroup concerning colour coded shaded relief images. With help from Ray Sterner and David Stern, I produced the following procedure. It's probably not in the least monkey-proof, so beware). If the thing works, your socks are guaranteed to be blasted into orbit for awe.

```
PRO clr_topo, dem

 ; displays a colour coded shaded relief
 ; dem is a digital elevation model. US dem's may be
 ; retrieved from http://sun1.cr.usgs.gov


z=bytscl(dem)
loadct,10
tvscl,z          ; rainbow table. Tables more representative for
tvlct,r,g,b,/get ; topography are easily produced. Elevations are
                 ; colour coded.

shades=topo(z)  ; produce a monochrome shaded relief image
                ; topo.pro is available from Ray Sterner's
                ; anonymous ftp site at fermi.jhuapl.edu

; decompose the colour image into the red, green and blue channels
; and convert to hue, saturation, value sets.

rr=r(z>1) & gg=g(z>1) & bb=b(z>1)
color_convert,rr,gg,bb,hh,ss,vv,/rgb_hsv

; now, replace the value channel "vv" by "shades". This trick is
; commonly used in satellite image processing. The value channel of
; a colour satellite image contains the information that we
; perceive as topography. In our particular case,
; this information resides in "shades", the shaded relief image.

color_convert,hh,ss,shades,r1,g1,b1,/hsv_rgb

; The topographic relief information is inserted into the colour
; coded elevation image. Finally, the image is converted back to
; the rgb colour system.

c=color_quan(r1,g1,b1,r2,g2,b2,colors=256,/dither) ;for 8 bit screens
tvlct,r2,g2,b2 & tv,c ; et voila le travail !
```

```
;loadct,0 & erase
;tv,rr,channel=1
;tv,gg,channel=2
;tv,bb,channel=3 ;for 24 bit screens

END
```

Yours,

Bob Janssen
Institut de Physique du Globe
5, rue Rene Descartes
67084 Strasbourg Cedex
France.
bob@klakmuf.u-strasbg.fr
