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Subject: Re: X and tvrd color scaling problem

Posted by [David Fanning](#) on Tue, 06 Jan 2004 05:22:48 GMT

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Michael Wallace writes:

```
> I'm having a strange problem with tvrd(). When using the Z buffer
> everything behaves as I expect. However, when using X tvrd() doesn't
> seem to scale the colors correctly.
>
> For an example, I created a new window and added a colorbar. In the
> window, everything looks normal. But, if I grab the image with tvrd()
> and then immediately display it with tv, the colors get scaled
> incorrectly and there's a lot of white which is index 255 of the color
> table I'm using.
>
> ; create a window and a colorbar (a la Coyote)
> device, DECOMPOSE = 0
> loadct, 39
> window, XSIZE = 400, YSIZE = 400
> colorbar, format = '(A1)'
>
> ; everything looks normal so far...
> ; grab the image and display it with tv
> image = tvrd()
> tv, image
>
> ; what happened?! the scaling is funky and there's a lot of white!
>
>
> However, if I use the Z buffer, everything behaves as I expect.
>
> ; create an image and a colorbar (a la Coyote)
> device, DECOMPOSE = 0
> loadct, 39
> set_plot, 'Z', /COPY
> device, SET_RESOLUTION = [400, 400]
> colorbar, format = '(A1)'
>
> ; grab the image and switch back to X to display it
> image = tvrd()
> set_plot, 'X'
> window, XSIZE = 400, YSIZE = 400
> tv, image
>
> ; the image looks normal and there's no weird scaling
>
>
```

> What gives? Why doesn't the X method capture the image correctly?

The X window has a depth of 24 bits, whereas the Z buffer has a depth of 8 bits. When you use TVRD in the way you are on a 24-bit device the value that is returned to you as the "value" of that pixel is the largest of the values in the red, green, and blue planes. Not what you want at all.

The solution depends on what it is you are trying to do, but let's just say this is why some of us invented programs like TVREAD and TVIMAGE. :-)

Something like this:

```
image = TVRD(True=1)
```

Followed by TV, image, TRUE=1 should work.

Cheers,

David

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