
Subject: Re: Coyote Color Program Updates
Posted by [Jeremy Bailin](#) on Fri, 16 May 2008 15:42:17 GMT
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On the subject of useful colour tables, does anyone have a good "velocity map" colour table? Something that goes from red through green to blue, kind of like PRISM, but that becomes significantly non-green closer to 128 that goes to strong-red and strong-blue at the ends rather than at intermediate indices?

-Jeremy.

Subject: Re: Coyote Color Program Updates
Posted by [Vince Hradil](#) on Fri, 16 May 2008 15:51:03 GMT
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On May 16, 10:42 am, Jeremy Bailin <astroco...@gmail.com> wrote:
> On the subject of useful colour tables, does anyone have a good
> "velocity map" colour table? Something that goes from red through
> green to blue, kind of like PRISM, but that becomes significantly non-
> green closer to 128 that goes to strong-red and strong-blue at the
> ends rather than at intermediate indices?
>
> -Jeremy.

Well... making your own is not that difficult.
http://www.dfanning.com/color_tips/create_colortable.html

Subject: Re: Coyote Color Program Updates
Posted by [fburton](#) on Fri, 16 May 2008 16:39:41 GMT
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In article <47326671-81ab-4ce1-b5d2-70dd853d8527@f36g2000hsa.googlegroups.com>, Vince Hradil <hradilv@yahoo.com> wrote:
> On May 16, 10:42 am, Jeremy Bailin <astroco...@gmail.com> wrote:
>> On the subject of useful colour tables, does anyone have a good
>> "velocity map" colour table? Something that goes from red through
>> green to blue, kind of like PRISM, but that becomes significantly non-
>> green closer to 128 that goes to strong-red and strong-blue at the
>> ends rather than at intermediate indices?
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>> -Jeremy.
>
> Well... making your own is not that difficult.
> http://www.dfanning.com/color_tips/create_colortable.html

My programs allow users to specify colour scales by giving a series of letters (and 0 for black, 1 for white). Each letter represents a particular colour, with R being primary red (255,0,0), G being green, B blue etc. Interpolation is in RGB space. So a 'standard' red-thru-green-thru-blue' would be represented by the string "RGB". Greyscale would be "01". More subtle scales can be constructed by adding extra letters. You could get a more 'pinched' scale by specifying "RRGBB", though this would produce regions at the end in which the colour didn't change. Alternatively, you could use special characters that extend the 'influence' of the adjacent colour letter, e.g. "R>G<B".

The advantage of this method is that it is intuitive and users can play about with letters to get immediate feedback. I have used it to reproduce most standard 'special purpose' colour scales in published papers and in IDL and Matlab.

Unfortunately, it's in Delphi (but could be converted to IDL easily enough, I imagine).

Francis

Subject: Re: Coyote Color Program Updates
Posted by [wlandsman](#) on Fri, 16 May 2008 16:45:47 GMT
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On May 16, 11:42 am, Jeremy Bailin <astroco...@gmail.com> wrote:
> On the subject of useful colour tables, does anyone have a good
> "velocity map" colour table? Something that goes from red through
> green to blue, kind of like PRISM, but that becomes significantly non-
> green closer to 128 that goes to strong-red and strong-blue at the
> ends rather than at intermediate indices?
>

You might look at some very old procedures in the solar library
http://sohowwww.nascom.nasa.gov/solarsoft/gen/idl/display/form_vel.pro (to load a velocity table), [load_vel.pro](#) (to process an image for display with a color table), and [combine_vel.pro](#) (to display both intensity and velocity).

From the FORM_VEL documentation:

```
; When used with LOAD_VEL, positive velocities will be shown in blue,  
negative  
; velocities in red (or visa-versa), velocities at or near zero will  
be  
; shown in grey, and missing pixels will be black.
```

--Wayne

P.S. These procedures have a lot of dependencies so I might just use them for ideas, if you don't have the solar library already installed.

Subject: Re: Coyote Color Program Updates
Posted by [Jeremy Bailin](#) on Sat, 17 May 2008 13:02:16 GMT
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> You might look at some very old procedures in the solar library http://sohowwww.nascom.nasa.gov/solarsoft/gen/idl/display/form_vel.pro (to load a velocity table), [load_vel.pro](#) (to process an image for display with a color table), and [combine_vel.pro](#) (to display both intensity and velocity).

Thanks, Wayne, those look great!

> Well... making your own is not that difficult.

Yeah, that's what I invariably do, but every time I need it (and it's quite common) I do it afresh and come up with something that I'm not entirely happy with...

-Jeremy.

Subject: Re: Coyote Color Program Updates
Posted by [ph le sager](#) on Sat, 17 May 2008 19:12:27 GMT
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On May 15, 11:24 am, David Fanning <n...@dfanning.com> wrote:

> Folks,
>
> I guess I was feeling ambitious, but I like those Brewer Colors so much, I decided to update all my color programs to support them. The following programs have been updated:
>
> http://www.dfanning.com/programs/fsc_color.pro
> <http://www.dfanning.com/programs/xcolors.pro>
> <http://www.dfanning.com/programs/pickcolor.pro>
> <http://www.dfanning.com/programs/pickcolorname.pro>
> <http://www.dfanning.com/programs/ctload.pro>
>
> To use Brewer Colors with XCOLORS or CTLOAD,
> you must either download the brewer.tbl file from

> Mike Galloy's web page, or download the fsc_brewer.tbl
 > file from mine. Mine contains only the 256-element color
 > tables from Mike's nice file:
 >
 > http://www.dfanning.com/programs/fsc_brewer.tbl
 >
 > If you don't have a clue what I am talking about, here
 > are some references:
 >
 > [http://www.personal.psu.edu/cab38/ColorBrewer/ColorBrewer_in tro.html](http://www.personal.psu.edu/cab38/ColorBrewer/ColorBrewer_intro.html)
 > <http://michaelgalloy.com/2007/10/30/colorbrewer.html>
 >
 > The brewer color table file must be installed in the
 > \$IDL_DIR/resource/colors directory, or in the same
 > directory containing the color program source code files.
 > (More or less.) Other Coyote programs may also be required.
 > You can download all the Coyote programs here:
 >
 > <http://www.dfanning.com/programs/coyoteprograms.zip>
 >
 > Or, if you never bothered to see how your IDL programming life
 > could be significantly improved, you can read all about the
 > programs in the Coyote Library here:
 >
 > <http://www.dfanning.com/documents/programs.html>
 >
 > Cheers,
 >
 > David
 >
 > --
 > David Fanning, Ph.D.
 > Fanning Software Consulting, Inc.
 > Coyote's Guide to IDL Programming:<http://www.dfanning.com/>
 > Sepore ma de ni thui. ("Perhaps thou speakest truth.")

As I noted in a post on Mike blog (<http://michaelgalloy.com/2008/02/21/updated-brewer-color-tables.html>), there is an issue with the diverging color tables. You expect to have the "center" color (like white or yellow) from which the color scheme diverge at index 126-127, but :

"By plotting R,G and B vectors, I found that the diverging tables are centered on 117. First half is index 0-116 and second half is 117-233. They basically saturate after index 233.

So I just load the 256 colors and use only the first 233 colors."

I do not know if you fix it. But I have been using them (like you I

like them a lot), and in my program (that uses xcolors!) I used a kludge along these lines:

```
xcolors, NColors=NColors, /Block, $
      File=CtFile, ColorInfo=ColorInfoData, _EXTRA=e
Name = ColorInfoData.Name
Table = ColorInfoData.Index

;-----
; Temporary hack for Brewer diverging tables: they are centered on
; color #117 instead of #125. (phs, 23/4/08)
if strPos(Name, '(Diverging)') ge 0 then begin

    ; Reload All colors and only keep the good ones
    loadct, table, file=ctfile, /SILENT
    tvlct, r, g, b, /get
    r = r[0:233]
    g = g[0:233]
    b = b[0:233]

    ncolors = ncolors < 234

    ; compress to ncolors if needed Ncolors passed by user
    if ( Is_NC_defined ) then begin
        R = Congrid( R, NColors, /Minus_One, /Interp, _EXTRA=e )
        G = Congrid( G, NColors, /Minus_One, /Interp, _EXTRA=e )
        B = Congrid( B, NColors, /Minus_One, /Interp, _EXTRA=e )
    endif

endif

;----- End Hack -----
```

This is particularly important with some values of ncolors.

Cheers, Philippe

Subject: Re: Coyote Color Program Updates

Posted by [David Fanning](#) on Sun, 18 May 2008 23:05:46 GMT

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ph le sager writes:

- > By plotting R,G and B vectors, I found that the diverging tables are
- > centered on 117. First half is index 0-116 and second half is 117-233.
- > They basically saturate after index 233.

I'm aware of this, and I have some ideas for fixing it,
but I've been off learning to become a wilderness
ranger for the past several days. I should have something
better soon.

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Sepore ma de ni thui. ("Perhaps thou speakest truth.")
