Subject: log scale colorbar in IDL 8.0
Posted by Kim on Tue, 17 May 2011 20:25:09 GMT
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Hello,

I have just started using the new graphics routines in IDL 8.0/8.1 and
am trying to incorporate them into an extensive set of customized
plotting and image type routines. I am able to use the IMAGE function
to display some log-normally distributed data, however I am unable to
create a colorbar that reflects the log-transformed data.

Here is a simplified example:
; Read the data array
; Convert the scaled float array (using ALOG10) to a byte array
im = IMAGE(bytedata)
cb =
 COLORBAR(target=im,tickvalues=[0.01,0.03,0.1,0.3,1.0,3.0,10. 0,30.0],tickname=['.
01','.03','.1','.3','1','3','10','30'], title='Log Data')

Some specific questions:
1) How do you scale the color bar so that it reflects the scaled data?
2) If tickvalues are supplied, can you also input ticknames? In the
above example, the supplied ticknames are not used and instead the
ticknames are derived from the tickvalues. The only way I have been
able to use the ticknames is to remove the tickvalues keyword.
3) Is it possible to set minimum and maximum color or value ranges?
For example, in one of my commonly used rgb_tables, the 0 value is
black and above 250 are various shades of gray. How do I set it so
that mincolor=1 and maxcolor=250?
4) Is it possible to create a colorbar that is independent of some
specified data? It would be very useful to be able to create a
colorbar just using a user supplied data range instead of being
directly linked to a specfic data field. There are times when I need
to create stand alone colorbars and I can't figure out how to do this
with the COLORBAR function.

Thank you for your assistance,
Kim

Subject: Re: log scale colorbar in IDL 8.0
Posted by pgrigis on Thu, 19 May 2011 15:53:04 GMT
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On May 19, 11:42 am, David Fanning <n...@idlcoyote.com> wrote:
> Paolo writes:
>> Ah, very cool! The power of the coyote graphics is strong with you! :)

>> By the way do feel free to use my code for any purpose whatsoever -
>> it's
>> in the public domain.
>
> I have thought about creating a "public" Coyote Graphics
> space, where people can submit programs that make use of
> the CGS system. I don't personally want to maintain these
> programs (I have my hands full most days maintaining my own!),
> but I would like to make them available to the CGS community.
>
> Perhaps I could put this one in there as the inaugural
> contribution. :-)
>
>
>
>> The problem I personally have with cg (and this is entirely the fault
>> of the way IDL manages namespace) is that it can't be run within
>> solarsoft,
>> since solarsoft did seem fit to steal some coyote routines (without
>> renaming
>> them) so now I have several mutually incompatible version of some
>> coyote
>> routines...
>
> Well, I have tried very hard to fix this problem, even
> talking to some of the Solar Soft people several weeks
> ago. I thought I had made all the Coyote Library routines
> compatible with the Solar Soft routines. (Have you downloaded
> a recent Coyote Library?)

Well by putting the coyote library at the beginning
of my path I can run the cg software :) It's just
that I am not sure whether that will or will not
cause some solarsoft routines to crash... but let
me try to run a few weeks with that setup and see
how it works out.

Ciao,
Paolo

>
> If you are having problems with a specific routine,
> I'd be happy to try to fix it. Part of the name change
> business (FSC_Plot -> cgPlot) was to fix this very
> problem!
>
> Cheers,

>
> David
>
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming:http://www.idlcoyote.com/
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: log scale colorbar in IDL 8.0
Posted by David Fanning on Thu, 19 May 2011 16:02:43 GMT
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Paolo writes:

> By the way, the cg version doesn't seem to be properly
> honoring the axis ranges. For instance, a y range of
> [-100,100] should show an image only in the upper half
> of the axis, as the image y-range is only [0,127]...
>
> (well one could wonder why would you plot that way...
> but the idea behind pg_plotimage was to plot an image the
> same way you would use "plot"...)

Ah, OK, I misunderstood the notion of "position".
I'll see if I can fix this.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: log scale colorbar in IDL 8.0
Posted by David Fanning on Thu, 19 May 2011 16:42:16 GMT
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Paolo writes:

> By the way, the cg version doesn't seem to be properly
> honoring the axis ranges. For instance, a y range of
> [-100,100] should show an image only in the upper half
> of the axis, as the image y-range is only [0,127]...
>
> (well one could wonder why would you plot that way...
> but the idea behind pg_plotimage was to plot an image the
> same way you would use "plot"...)

Hi Paolo,

I have no trouble fixing this for the display, but
I can't make it write a proper PostScript file. I've
gone back to the original code, and I can't make that
program write a proper PostScript file with this command
either! Have you ever tried to write a PostScript file
with the commands above in your original program? :-)

Cheers,

David

--
David Fanning, Ph.D.
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Subject: Re: log scale colorbar in IDL 8.0
Posted by David Fanning on Thu, 19 May 2011 16:53:41 GMT
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David Fanning writes:

>
> Paolo writes:
>
>> By the way, the cg version doesn't seem to be properly
>> honoring the axis ranges. For instance, a y range of
>> [-100,100] should show an image only in the upper half
>> of the axis, as the image y-range is only [0,127]...
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>> (well one could wonder why would you plot that way...
>> but the idea behind pg_plotimage was to plot an image the
>> same way you would use "plot"...)

>
> Hi Paolo,
>
> I have no trouble fixing this for the display, but
> I can't make it write a proper PostScript file. I've
> gone back to the original code, and I can't make that
> program write a proper PostScript file with this command
> either! Have you ever tried to write a PostScript file
> with the commands above in your original program? :-)

Here is the code I am using with your original program.

```
 loadct,5
 im=dist(128,128)
 x=findgen(128)
 y=findgen(128)
 ps_start, filename='test_1.ps'
 pg_plotimage,im,x,y,xrange=[5,100],$
  yrange=[5,100],/xstyle,/ystyle,/xlog
 ps_end
 ps_start, filename='test_2.ps'
 pg_plotimage,im,x,y,xrange=[5,100],$
   yrange=[-100,100],/xstyle,/ystyle,/xlog
 ps_end
 END
```

test_1.ps seems to be fine. But test_2.ps is
buggered. :-)

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
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Subject: Re: log scale colorbar in IDL 8.0
Posted by pgrigis on Thu, 19 May 2011 17:52:10 GMT
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On May 19, 12:53 pm, David Fanning <n...@idlcoyote.com> wrote:
> David Fanning writes:
>

>> Paolo writes:
>
>>> By the way, the cg version doesn't seem to be properly
>>> honoring the axis ranges. For instance, a y range of
>>> [-100,100] should show an image only in the upper half
>>> of the axis, as the image y-range is only [0,127]...
>
>>> (well one could wonder why would you plot that way...
>>> but the idea behind pg_plotimage was to plot an image the
>>> same way you would use "plot"...)
>
>> Hi Paolo,
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>> program write a proper PostScript file with this command
>> either! Have you ever tried to write a PostScript file
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> Here is the code I am using with your original program.
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>   y=findgen(128)
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>   pg_plotimage,im,x,y,xrange=[5,100],$
>   yrange=[5,100],/xstyle,/ystyle,/xlog
>   ps_end
>   ps_start, filename='test_2.ps'
>   pg_plotimage,im,x,y,xrange=[5,100],$
>   yrange=[-100,100],/xstyle,/ystyle,/xlog
>   ps_end
>   END
>
> test_1.ps seems to be fine. But test_2.ps is
> buggered. :-)

Yes that's a bug for sure.

Considering the program was written with the idea to
figure out the luminosity of each pixel on the screen
by interpolating the values of the images to a pixel
grid, I guess it's not entirely surprising that it
doesn't work very well with the PS device, which in
fact does not even have the concept of a pixel...

Let me think if I can figure out a solution.

Ciao,
Paolo

>
> Cheers,
>
> David
>
> --
> David Fanning, Ph.D.
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Subject: Re: log scale colorbar in IDL 8.0
Posted by David Fanning on Thu, 19 May 2011 18:00:23 GMT
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Paolo writes:

> Yes that's a bug for sure.
>
> Considering the program was written with the idea to
> figure out the luminosity of each pixel on the screen
> by interpolating the values of the images to a pixel
> grid, I guess it's not entirely surprising that it
> doesn't work very well with the PS device, which in
> fact does not even have the concept of a pixel...
>
> Let me think if I can figure out a solution.

The key will be determining a POSITION where
you want the image to appear. Once we know that,
our problem is solved. :-)

Cheers,

David

--
David Fanning, Ph.D.

Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: log scale colorbar in IDL 8.0
Posted by pgrigis on Thu, 19 May 2011 19:36:09 GMT
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On May 19, 12:53 pm, David Fanning <n...@idlcoyote.com> wrote:
> David Fanning writes:
>
>> Paolo writes:
>
>>> By the way, the cg version doesn't seem to be properly
>>> honoring the axis ranges. For instance, a y range of
>>> [-100,100] should show an image only in the upper half
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>>> (well one could wonder why would you plot that way...
>>> but the idea behind pg_plotimage was to plot an image the
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>> Hi Paolo,
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>
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>   yrange=[5,100],/xstyle,/ystyle,/xlog
> ps_end
> ps_start, filename='test_2.ps'
> pg_plotimage,im,x,y,xrange=[5,100],$
>   yrange=[-100,100],/xstyle,/ystyle,/xlog
> ps_end
> END
>

> test_1.ps seems to be fine. But test_2.ps is
> buggered. :-)

It turns out it was a simple (i.e. stupid) bug
with two indices that were 0 and should have
been 1.

Since it turns out I let my password expire I can't
update the version on the CfA webpage right now,
but you can find the fixed version on:

http://www.grigis.ch/pg_plotimage.pro

Or manually fix the indices from 0 to 1 at the end of lines
249 and 252.

Ciao,
Paolo

>
> Cheers,
>
> David
>
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> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: log scale colorbar in IDL 8.0
Posted by David Fanning on Thu, 19 May 2011 20:26:55 GMT
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Paolo writes:

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> with two indices that were 0 and should have
> been 1.
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> but you can find the fixed version on:
>
> http://www.grigis.ch/pg_plotimage.pro
>
> Or manually fix the indices from 0 to 1 at the end of lines

> 249 and 252.

OK, then you can find a working version in the usual
spot. I'll add it to the "public" folder in the
Coyote Library.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
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Subject: Re: log scale colorbar in IDL 8.0
Posted by davide.fedele on Thu, 12 Mar 2015 13:36:06 GMT
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Hi,

did anyone found a solution to the original question?

Thanks,
Davide

On Tuesday, May 17, 2011 at 10:25:09 PM UTC+2, KH wrote:
> Hello,
>
> I have just started using the new graphics routines in IDL 8.0/8.1 and
> am trying to incorporate them into an extensive set of customized
> plotting and image type routines. I am able to use the IMAGE function
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>
> Thank you for your assistance,
> Kim
