Subject: cgContour and NaN values
Posted by limiqt on Tue, 08 Oct 2013 17:58:09 GMT
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Dear all,
I am having some trouble using contour with data which has NaN values. My valid range of data is -1 to 1. I have also change the NaN to -999. In that case the -999 appear as the same color as -1. I would like that the NaN values appear as white. Please, Could you tell me what I am doing wrong? (I am following a example I found at http://www.idlcoyote.com/graphics_tips/contourcolors.php but Im sure i missed somthing)

my data is [192,145]

```
data
minval=-1.
maxval=1.
data=cgScaleVector(data, minval, maxval, /NaN)

cgwindow
ncontours = 10
cgLoadCT, 22, /Brewer, /Reverse, NColors=ncontours
clevels = cgScaleVector(Findgen(ncontours+1), minval, maxval, /NaN)
colors = Bindgen(ncontours+1) + 1B
cgContour, data, lons, lats, Levels=clevels, C_Colors=colors, /Fill, missing=!Values.F_Nan,
Position=[0.125, 0.125, 0.925, 0.8], /AddCmd
cgColorbar, NColors=ncontours, Range=[minval,maxval], Divisions=10, $
    Bottom=1, Ticklen=0.001, /AddCmd
```

Thanks
Lim.

Subject: Re: cgContour and NaN values
Posted by Andy Sayer on Tue, 08 Oct 2013 18:55:47 GMT
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With the caveat that I haven't tested, this, I spot your code specifies missing=!Values.F_Nan . I'd either change that to -999, or else leave your missing values as !values.f_nan . I'd try that.

Andy

On Tuesday, October 8, 2013 1:58:09 PM UTC-4, Lim wrote:
> Dear all,
>
> I am having some trouble using contour with data which has NaN values. My valid range of data is -1 to 1. I have also change the NaN to -999. In that case the -999 appear as the same color as -1. I would like that the NaN values appear as white. Please, Could you tell me what I am doing wrong? (I am following a example I found at

http://www.idlcoyote.com/graphics_tips/contourcolors.php but Im sure i missed somthing)
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>
>
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> data
>
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>
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> data=cgScaleVector(data, minval, maxval, /NaN)
>
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>
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> ncontours = 10
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>
> cgContour, data, lons, lats, Levels=clevels, C_Colors=colors, /Fill, missing=!Values.F_Nan,
Position=[0.125, 0.125, 0.925, 0.8], /AddCmd
>
> cgColorbar, NColors=ncontours, Range=[minval,maxval], Divisions=10, $
>
>   Bottom=1, Ticklen=0.001, /AddCmd
>
>
>
> Thanks
>
> Lim.

Subject: Re: cgContour and NaN values
Posted by limiqt on Wed, 09 Oct 2013 08:44:21 GMT
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Thanks Andy.

The code works (i think) changing the NaN to -999. and by explicitly defining the color table. It does not work using NaN. It does not work following the color table as in the example I mentioned (http://www....)

```
mindata=Min(datax)
maxdata=Max(datax)
data=cgScaleVector(datax, mindata, maxdata)
;print, mindata
;print, maxdata

;cgwindow
ncolors = 8
;cgLoadCT,0
TVLCT, cgColor(['blu8', 'blu6', 'blu4', 'blu2', 'red2', 'red4','red6', 'red8', 'white'], /Triple), 1
clevels=[-1,-0.75, -0.5, -0.25, 0, 0.25, 0.5, 0.75, 1]
colors = Bindgen(ncolors+1) + 1B
cgContour, data, lons, lats, Levels=clevels, C_Colors=colors, /Fill, $
     Position=[0.125, 0.125, 0.925, 0.8];, /AddCmd
cgColorbar, NColors=ncolors, Range=[-1,1], Divisions=ncolors, $
     Bottom=1, Ticklen=0.001;, /AddCmd
```

On Tuesday, October 8, 2013 2:55:47 PM UTC-4, AMS wrote:
> With the caveat that I haven't tested, this, I spot your code specifies missing=!Values.F_Nan . I'd either change that to -999, or else leave your missing values as !values.f_nan . I'd try that.
>
>
>
> Andy
>
>
>
> On Tuesday, October 8, 2013 1:58:09 PM UTC-4, Lim wrote:
>
>> Dear all,
>
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>> my data is [192,145]
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>> data
>
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>> minval=-1.
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>>
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>> maxval=1.
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>
>> data=cgScaleVector(data, minval, maxval, /NaN)
>
>>
>
>>
>
>>
>
>> cgwindow
>
>>
>
>> ncontours = 10
>
>>
>
>> cgLoadCT, 22, /Brewer, /Reverse, NColors=ncontours
>
>>
>
>> clevels = cgScaleVector(Findgen(ncontours+1), minval, maxval, /NaN)
>
>>
>
>> colors = Bindgen(ncontours+1) + 1B

>
>>
>
>> cgContour, data, lons, lats, Levels=clevels, C_Colors=colors, /Fill, missing=!Values.F_Nan,
Position=[0.125, 0.125, 0.925, 0.8], /AddCmd
>
>>
>
>> cgColorbar, NColors=ncontours, Range=[minval,maxval], Divisions=10, $
>
>>
>
>> Bottom=1, Ticklen=0.001, /AddCmd
>
>>
>
>>
>
>>
>
>> Thanks
>
>>
>
>> Lim.

Subject: Re: cgContour and NaN values
Posted by Phillip Bitzer on Wed, 09 Oct 2013 23:05:53 GMT
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NaNs are handled a particular way by Contour:
http://www.exelisvis.com/docs/CONTOUR_Procedure.html

In particular, the line:
"Note that the IEEE floating-point value NaN is also treated as missing data."
might explain some of the problems you're having.

May I gently a different way of defining the "color table" using the palette keyword, since you're using Coyote graphics:

(My apologies for not adopting this example to fit yours - this is an example from some notes I've developed : https://www.dropbox.com/s/c8so8daw70tpe5v/contour_notes.pdf)

```
nLev = 5
l_levels = DINDGEN(5)*50 + 100
l_ticks = [STRING(l_levels, FORMAT='(F5.1)'), ' ']
```

```
colors = ['blue', 'red', 'green', 'yellow', 'orange']
rgb = cgCOLOR(colors, /TRIPLE)

cgContour, data, lons, lats, LEVELS = l_levels, PALETTE=rgb, /FILL, POSITION=[0.1, 0.1, 0.8,
0.9]

cgCOLORBAR, /VERTICAL, /RIGHT, NCOLORS = nLev, PALETTE = rgb, DIVISIONS = nLev,
POSITION = [0.85, 0.1, 0.9, 0.9], TICKNAMES = l_ticks
```

Subject: Re: cgContour and NaN values
Posted by David Fanning on Thu, 10 Oct 2013 14:16:46 GMT
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Lim writes:

> I am having some trouble using contour with data which has NaN values. My valid range of data is -1 to 1. I have also change the NaN to -999. In that case the -999 appear as the same color as -1. I would like that the NaN values appear as white. Please, Could you tell me what I am doing wrong? (I am following a example I found at http://www.idlcoyote.com/graphics_tips/contourcolors.php but Im sure i missed somthing)

It is almost *never* a good idea to try filled contours with missing data. The results are always unsatisfactory. But, if you have to, you have to. I would try something like this.

```
data = dist(192,145)
data[50:60,75:79] = !Values.F_NaN
minval=-1.
maxval=1.
nanIndices = Where(Finite(data) EQ 0, count)
data=cgScaleVector(data, minval, maxval, /NaN)
IF count GT 0 THEN data[nanIndices] = minval - 1
cgWindow
ncontours = 10
cgLoadCT, 22, /Brewer, /Reverse, NColors=ncontours+1, Bottom=2
TVLCT, cgColor('white', /Triple), 1
clevels = [minval-1, cgScaleVector(Findgen(ncontours+1), $
   minval, maxval)]
colors = Bindgen(ncontours+1) + 1B
cgContour, data, lons, lats, Levels=clevels, C_Colors=colors, /Fill, $
   missing=!Values.F_Nan, Position=[0.125, 0.125, 0.925, 0.8], /AddCmd
cgColorbar, NColors=ncontours, Range=[minval,maxval], Divisions=10, $
   Bottom=2, Ticklen=0.001, /AddCmd
END
```

Cheers,

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

Subject: Re: cgContour and NaN values
Posted by limiqt on Wed, 16 Oct 2013 02:54:49 GMT
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Hi David and Philip.
Thank you very much for your precisse assistance.

Lim

On Thursday, October 10, 2013 10:16:46 AM UTC-4, David Fanning wrote:
> Lim writes:
>
>
>
>> I am having some trouble using contour with data which has NaN values. My valid range of data is -1 to 1. I have also change the NaN to -999. In that case the -999 appear as the same color as -1. I would like that the NaN values appear as white. Please, Could you tell me what I am doing wrong? (I am following a example I found at http://www.idlcoyote.com/graphics_tips/contourcolors.php but Im sure i missed somthing)
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> IF count GT 0 THEN data[nanIndices] = minval - 1
>
> cgWindow
>
> ncontours = 10
>
> cgLoadCT, 22, /Brewer, /Reverse, NColors=ncontours+1, Bottom=2
>
> TVLCT, cgColor('white', /Triple), 1
>
> clevels = [minval-1, cgScaleVector(Findgen(ncontours+1), $
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>   minval, maxval)]
>
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> cgContour, data, lons, lats, Levels=clevels, C_Colors=colors, /Fill, $
>
>   missing=!Values.F_Nan, Position=[0.125, 0.125, 0.925, 0.8], /AddCmd
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> cgColorbar, NColors=ncontours, Range=[minval,maxval], Divisions=10, $
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>   Bottom=2, Ticklen=0.001, /AddCmd
>
> END
>
>
>
>
>
> Cheers,
>
>
>
> David
>
> --
>
> David Fanning, Ph.D.
>
> Fanning Software Consulting, Inc.
>
> Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
>
> Sepore ma de ni thue. ("Perhaps thou speakest truth.")