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Subject: Re: What am I doing wrong with `al_legend`?  
Posted by [David Fanning](#) on Tue, 13 Dec 2011 18:20:00 GMT  
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Avian writes:

> I'm trying to create a legend with `al_legend`, and I thought i was following all the rules, but I just can't get the symbols in the legend to come up as anything other than whatever symbol I just used to plot the last line of data with.  
>  
> In this example, `legtxt` is a 8-dimensional string array  
>  
> `clrs=['black','red','org5','blue','grn4','orange','violet',' dodger blue']`  
> `sym=[16,16,16,16,16,16,16,16]`  
> `AL_legend,legtxt,psym=sym,color=clrs,pos=[65,0.5],box=0,/WIN DOW`  
>  
> (I've also tried "colors" as the keyword instead of "color")  
>  
> All my symbols in the legend end up as the same color and shape as the command I last used on the plot to overplot data with. What am I missing?

Not sure. I'm certainly getting different colors in my graphics window when I try your code. Are your Coyote and NASA Astronomy Libraries up to date? This is the usual (>85%) reason for difficulties. :-)

Cheers,

David

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

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Subject: Re: What am I doing wrong with `al_legend`?  
Posted by [Avian](#) on Tue, 13 Dec 2011 18:40:04 GMT  
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I just updated to the latest Coyote Graphics on your site, updated `al_legend`, restarted IDL - no luck. So strange!

David - are you also seeing the correct `symbol=16` shape?

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Subject: Re: What am I doing wrong with al\_legend?  
Posted by [David Fanning](#) on Tue, 13 Dec 2011 19:13:08 GMT  
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Avian writes:

> I just updated to the latest Coyote Graphics on your site, updated al\_legend, restarted IDL - no luck. So strange!  
>  
> David - are you also seeing the correct symbol=16 shape?

Apparently so. Here is the code I used to test it:

```
cgplot, cgdemodata(1), /window, yrange=[-100,100]  
clrs=['black','red','org5','blue','grn4',$  
      'orange','violet','dodger blue']  
sym=[16,16,16,16,16,16,16,16]  
legtxt = StrTrim(Indgen(8)+1)  
AL_legend,legtxt,psym=sym,color=clrs,$  
      pos=[65,0.5],box=0,/WINDOW
```

And here is the output:

[http://www.idlcoyote.com/misc/al\\_legend\\_ex.png](http://www.idlcoyote.com/misc/al_legend_ex.png)

Cheers,

David

--

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Subject: Re: What am I doing wrong with al\_legend?  
Posted by [Avian](#) on Tue, 13 Dec 2011 19:24:40 GMT  
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Thanks - the last command I have before the al\_legend command is this:

```
cgplot,x,y+0.3,psym=13,SYMSIZE=0.7,color='blk5',/OVERPLOT,/A DDCMD,/WINDOW
```

Do you think you could try an overplot like this before you call al\_legend?

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Subject: Re: What am I doing wrong with al\_legend?  
Posted by [David Fanning](#) on Tue, 13 Dec 2011 19:43:58 GMT  
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Avian writes:

> Thanks - the last command I have before the al\_legend command is this:  
>  
> cgplot,x,y+0.3,psym=13,SYMSIZE=0.7,color='blk5',/OVERPLOT,/A DDCCMD,/WINDOW  
>  
> Do you think you could try an overplot like this before you call al\_legend?

Well, that does change things, although I can't for the life of me think why. :-(

If you do the overplot *after* the legend, things work OK:

```
cgplot, cgdemodata(1), /window, yrange=[-100,100]
clrs=['black','red','org5','blue','grn4',$
      'orange','violet','dodger blue']
sym=[16,16,16,16,16,16,16,16,16]
legtxt = StrTrim(Indgen(8)+1)
AL_legend,legtxt,psym=sym,color=clrs,$
      pos=[65,0.5],box=0,/WINDOW
cgplot,cgdemodata(1)/2,psym=13,SYMSIZE=0.7, $
      color='blk5',/OVERPLOT,/ADDCMD
END
```

I'll have to look into this. I'll get back to you.

Cheers,

David

--

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Subject: Re: What am I doing wrong with al\_legend?  
Posted by [Avian](#) on Tue, 13 Dec 2011 19:59:09 GMT  
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Thanks so much David - I should've thought about that overplot (although I have several - I'll do

the legend first). Thanks!

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Subject: Re: What am I doing wrong with al\_legend?  
Posted by [David Fanning](#) on Tue, 13 Dec 2011 20:29:52 GMT  
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David Fanning writes:

```
> Well, that does change things, although I can't for the
> life of me think why. :-(
>
> If you do the overplot *after* the legend, things
> work OK:
>
> cgplot, cgdemodata(1), /window, yrange=[-100,100]
> clrs=['black','red','org5','blue','grn4',$
>   'orange','violet','dodger blue']
> sym=[16,16,16,16,16,16,16,16]
> legtxt = StrTrim(Indgen(8)+1)
> AL_legend,legtxt,psym=sym,color=clrs,$
>   pos=[65,0.5],box=0,/WINDOW
> cgplot, cgdemodata(1)/2,psym=13,SYMSIZE=0.7, $
>   color='blk5',/OVERPLOT,/ADDCMD
> END
>
> I'll have to look into this. I'll get back to you.
```

OK. Oddly enough, this is another manifestation of a problem I described in a new article this morning:

[http://www.idlcoyote.com/cg\\_tips/wrongsym.php](http://www.idlcoyote.com/cg_tips/wrongsym.php)

In fact, I had no more than just published it when I read your post this morning! I guess when a problem is ready to be discovered, \*everyone\* discovers it at about the same time. :-(

Anyway, I think this is a problem with AL\_LEGEND. I don't fully understand how AL\_LEGEND works (or I might offer to take over support for the darn thing from Wayne!), but I do notice that if modify the call to cgPlotS on lines 481-483 by changing the PSYM keyword from this "psym=p\_sym" to this "psym=psmi[i]", then things work correctly.

I think this might be the case of not fully implementing the change to Coyote Graphics in AL\_LEGEND.

Anyway, I'll discuss this with Wayne and see what, if anything, we can do to fix it. :-)

Cheers,

David

--

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Subject: Re: What am I doing wrong with `al_legend`?

Posted by [David Fanning](#) on Tue, 13 Dec 2011 20:40:49 GMT

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David Fanning writes:

> I do notice that if modify the call to `cgPlotS` on lines  
> 481-483 by changing the `PSYM` keyword from this `"psym=p_sym"`  
> to this `"psym=psmi[i]"`, then things work correctly.

Let me try that sentence again!

I do notice that if I modify the call to `cgPlotS` on lines  
481-483 by changing the `PSYM` keyword from this `"psym=p_sym"`  
to this `"psym=psymi[i]"`, then things work correctly.

Sorry for the fat fingers this morning. I'm sick with  
a cold, and not moving very quickly.

Cheers,

David

--

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Subject: Re: What am I doing wrong with al\_legend?  
Posted by [Brian Wolven](#) on Tue, 13 Dec 2011 20:52:32 GMT  
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I think this is a case where the keyword arguments are being passed by reference rather than value, then modified in the legend routine, which propagates back to the calling routine. I'm not using the cg\* and al\* flavors of these routines, but had something similar happen with an older version of legend recently. Your modification is one way to work around the problem.

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Subject: Re: What am I doing wrong with al\_legend?  
Posted by [David Fanning](#) on Tue, 13 Dec 2011 21:12:13 GMT  
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Brian Wolven writes:

> I think this is a case where the keyword arguments are being passed by reference rather than value, then modified in the legend routine, which propagates back to the calling routine. I'm not using the cg\* and al\* flavors of these routines, but had something similar happen with an older version of legend recently. Your modification is one way to work around the problem.

I think it really has to do with the fact that keyword values get "frozen" by necessity when they are added to cgWindow. This code, for example, worked perfectly well in a normal IDL graphics window. But, when added to cgWindow, the PSYM value is frozen at 8, meaning use the user defined symbol, and because there is \*only\* one user defined symbol allowed at any particular time, it uses the last one.

The work-around is to put any of these "dynamic" determinations of keyword or parameter values inside the program "command" that is being executed. That way the actual value can be determined when the command is executed from inside cgWindow.

In other words, let AL\_LEGEND figure out what symbol to use internally, rather than telling it what symbol to use from outside the program.

Or, something like that. It hurts my head to think about it. :-(

Cheers,

David

--

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Subject: Re: What am I doing wrong with al\_legend?

Posted by [Avian](#) on Tue, 13 Dec 2011 21:14:39 GMT

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That did it! David, even when you're sick, you're incredibly helpful - thanks! I've seen a few of those types of problems in procedures floating around lately from various sources.

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