
Subject: Re: overlying an image and a contour plot
Posted by [Craig Markwardt](#) on Tue, 16 Nov 1999 08:00:00 GMT
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Getting the right pixel alignment can be a problem. I also totally agree with Mr. Bennett's suggestion that you may need to "add" an extra half-pixel on either side.

I like to think about it this way: CONTOUR applies to data at the pixel *centers*, but when displaying an image you want to show every pixel out to its edges, and that's where the two half pixels comes from. I would also like to point out that TVIMAGE uses CONGRID, which has a bug in the way it interpolates, which *guarantees* that you will be off by at least a half a pixel. Not good.

To solve these problems I use the PLOTIMAGE procedure available from my web page (listed below). It makes putting images on the screen or Postscript page easy -- especially aligning everything.

Here's how it works. This little script assumes you have an image, and your X and Y values:

```
;; Usually you want to BYTSCL your image first - I like this algorithm
IDL> b = bytscl(image, min=-100, max=100, top=!d.n_colors-3b)+1b

;; Then you compute your image boundaries. Remember those half-pixels!
IDL> dx = x(1) - x(0) & dy = y(1) - y(0)
IDL> imgxrange = [min(x)-0.5*dx, max(x)+0.5*dx]
IDL> imgyrange = [min(y)-0.5*dy, max(y)+0.5*dy]

;; Finally, plot the image and overlay the contours
IDL> PLOTIMAGE, b, imgxrange=imgxrange, imgyrange=imgyrange
IDL> CONTOUR, image, x, y, ...
```

You see, most of it is a little bookkeeping. PLOTIMAGE is nice because you can specify an XRANGE and YRANGE independent of the image boundaries, meaning that you can zoom in to a sub image for example. And for astronomers, it will automatically reverse the image if needed!

Good luck,

Craig
<http://cow.physics.wisc.edu/~craigm/idl/idl.html>

P.S. PLOTIMAGE uses parts of TVIMAGE. The good parts. Thanks David!

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