Subject: Re: CCD saturation
Posted by MichaelT on Mon, 27 Oct 2008 13:43:44 GMT
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A couple of years ago I did something like this to remove the streaks (can't find the program any more, though...):

First label all stars in your image (img) which have pixel values above a threshold value

```
lab = Label_Region(img gt threshold)
h = (histogram(lab))[1: *]    ;[1: *] removes background pixel count

dims = Size(img, /Dimensions)  ;image dimensions
```

So h now contains the pixel count for each identified area. Saturated stars with streaks usually have a pixel count above a certain value (their area is larger). In a loop I then checked which area is larger than other_threshold and then determined the aspect ratio of each of these areas:

```
;Areas larger than 100 pixels probably have streaks (or whatever threshold is best in your case)
other_threshold = 100

w = Where(h gt other_threshold, n_areas)

;limiting aspect ratio, example: 1.2 (or whatever you like) considered to be a streaked star
a_threshold = 1.2

For i = 1, n_areas - 1 Do Begin

  wa = Where(lab EQ w[i] + 1)    ;+1 to compensate for the removed background count

  wx = wa Mod Dim[0]   ;Find the x- and y-locations of the pixels
  wy = wa / Mod[0]

  ;If your streaks are vertical, otherwise reverse wx and wy
  aspect_ratio = (Max(wy) - Min(wy) + 1.0) / (Max(wx) - Min(wx) + 1.0)

  If aspect_ration GT a_threshold Then Begin
    ;Do something to remove the streaks
  EndIf

EndFor
```

I can't remember exactly how I removed the streaks. I think I substituted the streak's pixels by pixel values that were found just adjacent to the streak (left and right). I also added some random noise to the pixels to make them less obvious.

I hope it helps.

Michael
