
ASTR 414 HW 9

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Reduced DES Image:

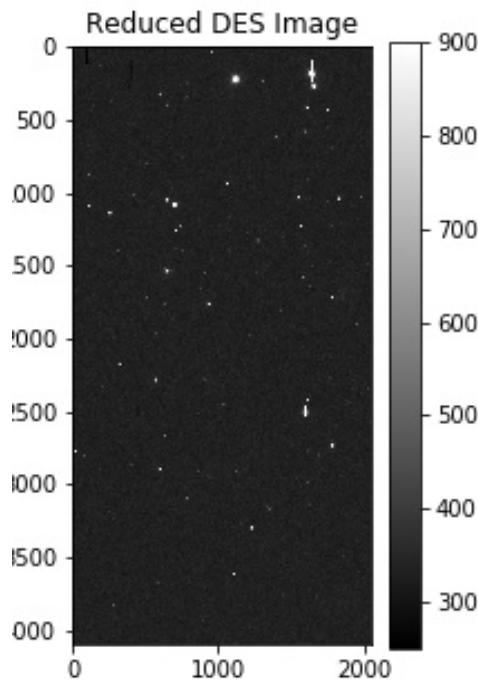


Figure 1: Reduced DES image with a gray color map, with vmin = 250 and vmax = 900

Image Offset:

To get the offset value, I used the DS9 program to view the new fits file of the reduced image and used the fk5 coordinates of α (right ascension) and δ (declination) to get the same area of stars from the 2Mass website. Once I got the 2Mass image, I uploaded that to DS9 as well. I then matched the two frames to WCS coordinates and selected a source from the reduced DES image and found its corresponding coordinates on the 2Mass image. The difference between those two numbers is the offset. To minimize error, I took the average of RA and DEC values of multiple main stars in the image and took the difference of those, as shown on the next page.

Averages:

Right Ascension (DES)	Declination (DES)	Right Ascension (2MASS)	Declination (2Mass)
3:13:28.213	-12:42:25.860	3:13:27.662	-12:42:32.662

Difference:

Right Ascension: $3 : 13 : 28.213 - 3 : 13 : 27.662$

Declination: $- 12 : 42 : 27.662 - (-12 : 42 : 32 : 662)$

Offset Value: $0.5', 2.5'$