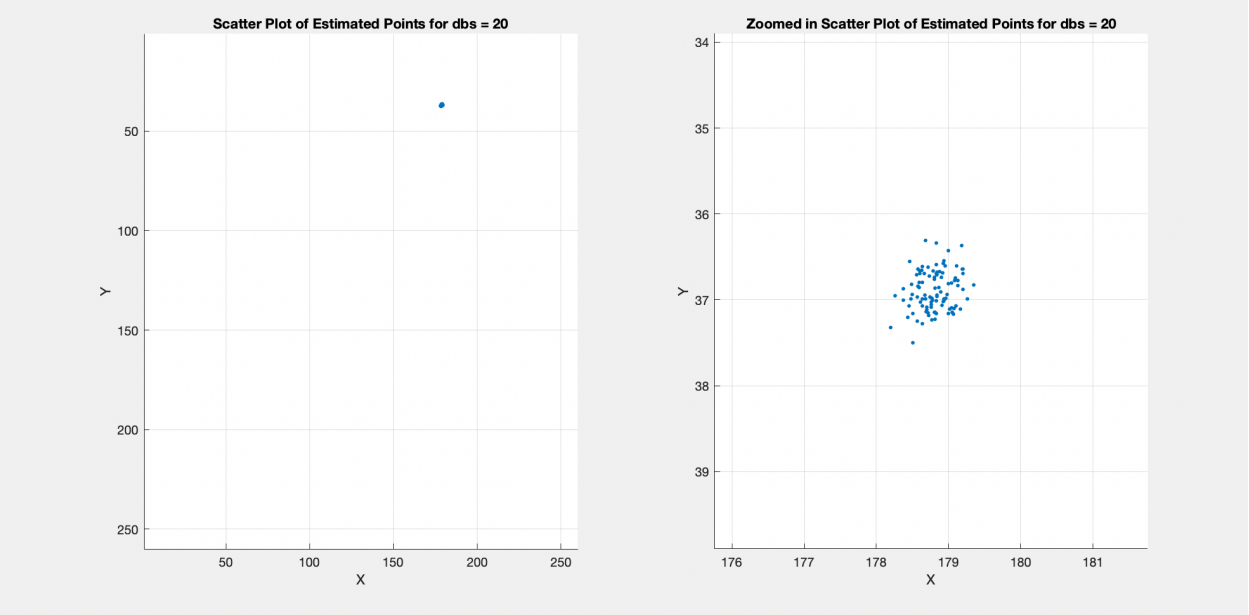
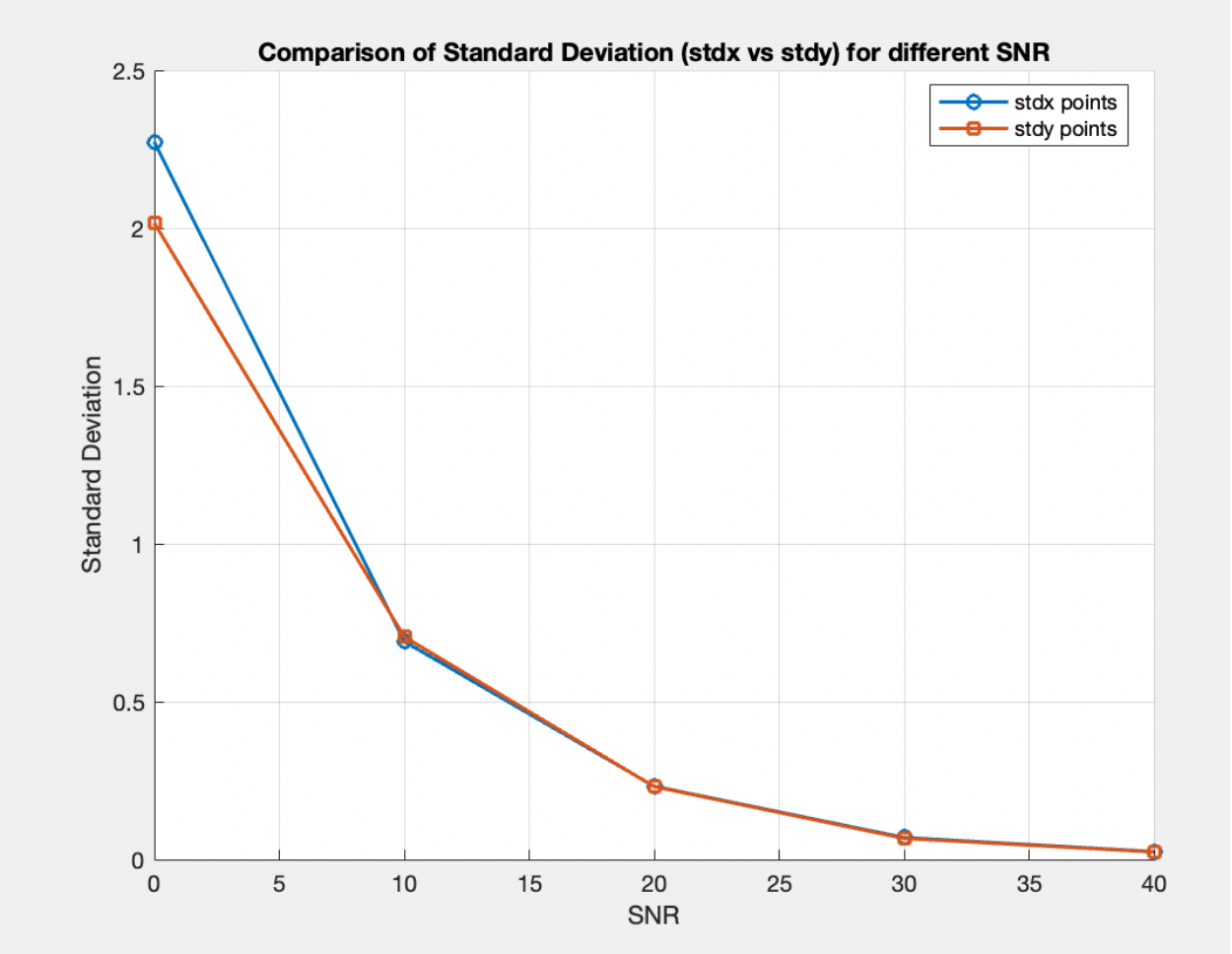
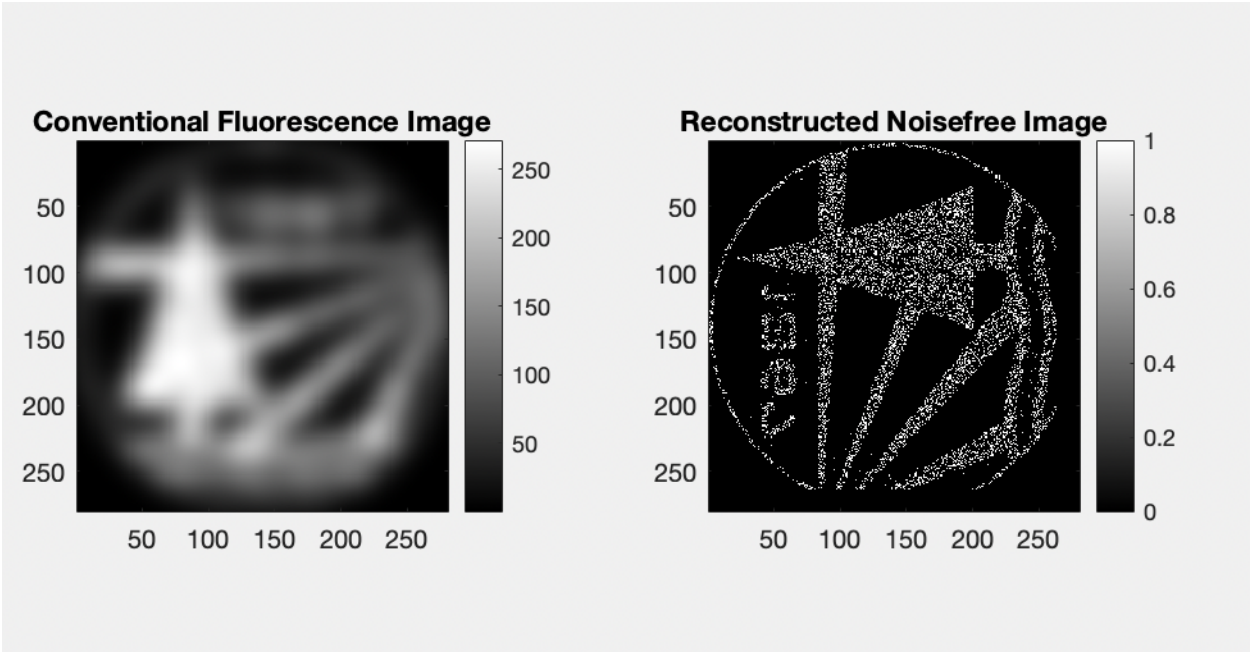
ENGS 117 Project 2

1. When there is no noise whatsoever, my answer agrees exactly with the ground truth. Of course, this exact return of x and y coordinated works no matter where the point source is located (assuming it is in the grid of course)
2. Using the standard deviations we can estimate the resolution. In the 20 db case, stdx = 0.6905 and stdy = 0.7057, . This is a big bump from the older version which had a stdx = 2.2734 and stdy = 2.016. As expected, looking at the graph of dbs vs standard deviation confirms that the signal to noise ratio is inversely related to the standard deviation of the gaussian x and y mean fits.





3. Looking at the graph below, I have accurately reconstructed the Thayer Image for the most part but there are a few isolated incorrectly localized points. One explanation for this could just be the limitation of the super-resolution technique (or maybe just an error in my code).



4. Looking at the reconstructed image, the result from question 3 is pretty much the same as this reconstructed image which actually deals with noise. Now, they are not the exact same because if you look closely you will notice some small difference but I mean in general.