Differential GPS

This is the report from the differential GPS project that we did three weeks ago in class. First, I shall look at when they were looking at nine satellites in general. When I averaged Grace’s latitude data, her average was -.036505 meters. John’s was -2.242493 meters. This suggests that Grace’s data was better. The standard deviation of Grace’s data was 1.231124 meters whereas John’s was 5.342899 meters. The standard deviation of the difference between the data was 5.5361605 meters. The correlation coefficient of the data was -.044607. This suggests that the data is not very correlated with each other, i.e. that differential GPS is not particularly better than regular GPS in this instance. Looking at when the GPS were locked onto the same nine satellites, here is the information. Grace’s latitude average was -.0332642 meters. John’s was .074682 meters. The standard deviations were as follows: Grace’s was 1.0318452 meters whereas John’s was 1.018886 meters. Here, John’s information looks to be better. The correlation between the two was -.147008 meters and the standard deviation of the difference is 1.55304227 meters. The correlation between the same nine satellites is both better and worse than for when we are looking at any nine satellites in general. The magnitude is closer to one, indicating a better correlation; however, the correlation is closer to negative one. We were looking for a positive one correlation. When looking at the ratio between the two different types of standard deviations, the ration for the nine satellites in general is closer to one than for the same nine satellites. This is also indicative of differential GPS not working better than regular GPS in this instance. Our experiment with differential GPS has apparently failed this time.