Conclusion:

One can clearly see from the Graph that the number of crimes that occur during days with a full moon is almost identical to the number of crimes that occurred during days with moon phases other than full. As we used an 8 cycle moon phase model, we divided the non- full moon results by 7 for comparison against the single full moon phase. After running a stat test, the P-value on the two data sets comes up as 0.948. Upon closer review, it is interesting to see that although the results are virtually the same; the full moon results are consistently higher by a very small amount. After more research on the number of full moons per year and when they occurred, this small variance can be explained by there being a slightly higher occurrence of full moons on Friday, Saturdays and Sundays over the time period in this study (As pointed out in the attached Excel document). As we know from another conclusion in this study, more crimes occur on these days and a disproportionate amount of full moons on these days would explain the small difference.

Limitations:

One of the biggest limitations specifically with Moon phases, would have to do with what the standard definition of a “Full Moon” is. There are different models of moon phases, some with 4 phases, and some with 8. The actual duration of the “Full Moon” phase is longer or shorter depending on the model used. For the purpose of this analysis, we used the crimes that occurred in a 24 hour period from the Toronto Crime API, corresponding to the same 24 hour periods moon phase from the Local Toronto Weather API.