

Carrie McDowell

Andrew McKinney

Joshua Linton

Kabao Xiong

February 15, 2020

ETL Project Report

This report was commissioned to examine one of the world's famous myths about moon phases and crime rate. The research was set up to draw attention toward crime cases and moon phases as well as lunar signs from the year of 2019. In order to dig deep into the myth of how the moon phases and occurrences with crime rate intertwine, the best way was to find out from one of the U.S.'s highest ranked city for crime rates and violence, St. Louis, MO.

The amount of crime cases gathered for the year of 2019 was 48,877, while the count of the moon phases was a total of 364. The research also shows that there were cases that were under investigation in the 1980s and 1990s, meaning that the total amount of crimes committed in 2019 was increased due to those cases being solved in that year. Another interesting factor that came across this research was merging clean crime rate data and moon phases data into one data frame in order to convert it onto sql. By diagnosing the problem, the converted data frame had to be viewed through excel. The converted data frame merged, but more than what was needed from the moon phase data frame was involved with the merge as

well, causing a mix and match of transferred data. The 'time' column from the moon phase dataset included the date and actual timing of moon transitions. Whereas, the crime rate dataset had the 'time' column as well, but only as date. In order to resolve this issue, a manipulation had to be done by using an "if" statement with a corrected length of time.

Web scraping, converting, and merging data was the overall plan to make executions. The conclusion of this research gave out an assortment of conclusions. The research showed that the highest crime rate in St. Louis, MO of the year of 2019, occurs the most when there is a waxing crescent moon and the least during a full moon. Crime rates were shown as higher in the summer, than the winter. All in all, the old folk's tale about how werewolves come out during a full moon, may not be so true. There seems to be no bias at all in which the moon phase is and when crimes are being committed.

Websites:

- We web scraped from <https://lunaf.com/lunar-calendar/>
- Crime rates: https://www.slmpd.org/crime_stats.shtml