What You Might Not Know About Meteorites

By Tina Nguyen and Menwa Besheer

A meteorite is a spatial fragment that fell on Earth's surface and was found in most places in the world. Meteorite's existence has drawn the attention of many scientists about its characteristics, frequently landed locations on Earth, its impact on Earth's surface, and so on. Moreover, we can learn more about our solar system, such as the beginning of the solar system or how planets were formed by studying meteorites. Thus, the study of meteorites is an important branch of the study of space and other related fields. The dataset used was from the Meteoritical Society on NASA's Open Data Portal. We were given a bunch of data with meteorite's name codes, ID#, mass, fallen geological location on Earth with a set of latitude and longitude, and landed year. Our main key for this project was to find the characteristics and locations where meteorites fell frequently on Earth, so we decided to narrow down the data by meteorites' classification, mass, and landed location.

First, the number of meteorites that fell each year was plotted to see the trends. The numbers started to be significant from 1970 until 2011. Then, the meteorites were classified into 5 main groups (types) and some groups had more than one subgroup. Their types and subtypes were added to the year vs count chart. It turned out that chondrites are the most abundant type. Out of the chondrites type, the subtype ordinary was the most dominant. Then, a map of the geographic locations and the number of meteorites that fell in that location was created to see if there's a specific area that was more exposed to meteorites. The regions where most meteorites were found are Antarctica, USA, Australia, North Africa and The South-Eastern Gulf area (near Oman). Lastly, charts were created to compare the mass of different groups of meteorites. The mass of meteorites varies based on its classifications. The iron is the heaviest group, and the chondrites are the lightest group.

Menwa's lesson learned:

This project was a great learning experience. It enhanced my data visualization skills. I enjoyed the process of filtering and manipulating the data to tell a story and extract useful information from a bunch of numbers and tables. Lastly, I learned from my coach that good data visualization is one that is able to show more than just one piece of information.

Tina's lesson learned:

Data Visualization is a new experience for me as an engineering student. I learned that I should understand the concepts by reading informative sources about meteorites on NatGeo and NASA's websites. I learned how to simplify the dataset by utilizing Excel functions. I knew how to use Tableau to show my data by making charts. From that, I could interpret my data story instead of showing a bunch of collected data from the original source. Thanks to my

coach's guidance, I was able to get back on the right track after failing to find the relationship among given data and to graph effectively visual data.

Reference link

Meteorites' classification chart: https://curator.jsc.nasa.gov/education/classification.cfm

NatGeo's information of meteorites:
https://education.nationalgeographic.org/resource/meteorite/