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# Problem #2

In figure 1, the x-axis is orbital period in earth days that one piece of data takes to orbit its host star, and the y-axis is the mass of the object in Jupiter masses of Exoplanets. Each piece of data is the method of discovery, and where it is located on the graph is the mass and the orbital period of the exoplanet. Both the x and y axes are logarithmically scaled.

# Problem #3

A close up of a map

Description automatically generated

# Problem #4

Id like to work on something involving the generation of electricity. I’d like to obtain data on the generation of electricity using coal-based applications and its waste. I’d compare it to the use of nuclear power generation using both uranium-based generation and thorium-based generation, showing the advantages of using either one vs coal-based electricity. I am a huge thorium advocate and have done a few papers on the use of thorium vs uranium and coal.

Some sources of data:

For coal-based electricity generation, I plan to use a few different sets of data at the U.S. Energy Information Administration

<https://www.eia.gov/coal/data.php>

For nuclear-based electricity generation, I plan to use a few different sets of data at World Nuclear Association

<https://www.world-nuclear.org/>

The set of data that I have chosen to visualize is the coal consumption in the united states by region for 2017 and 2018. 2019 data has yet to be published. We can see by the data that the amount in consumption decreased for most regions with the only increase occurring in the West North Central region which is comprised of: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota. I chose to visualize this set of data to show the consumption by region. Most of these regions are in the 80-120k range, and that number is in thousand short tons, meaning that number in pounds of coal is far greater than is visualized here. I also plan to show that the actual production using coal is far less efficient than using nuclear-based electricity generation. The U.S. Total is excluded here.

See Figure Below.

A screenshot of a cell phone

Description automatically generated