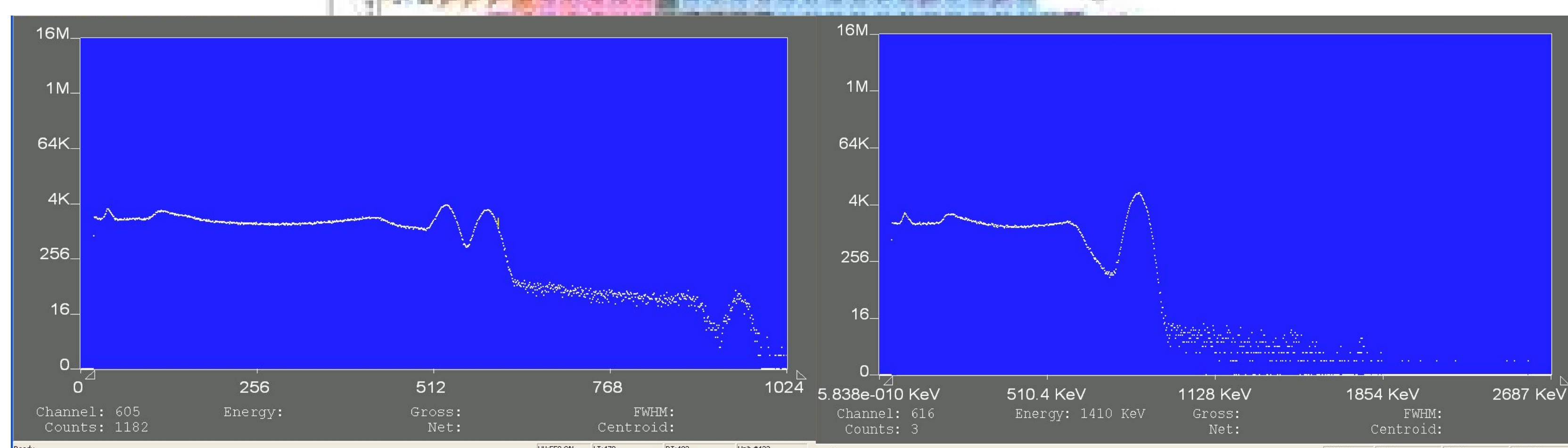


## Gamma Spectroscopy

The purpose of our experiment was to identify an unknown material based on its gamma radiation.



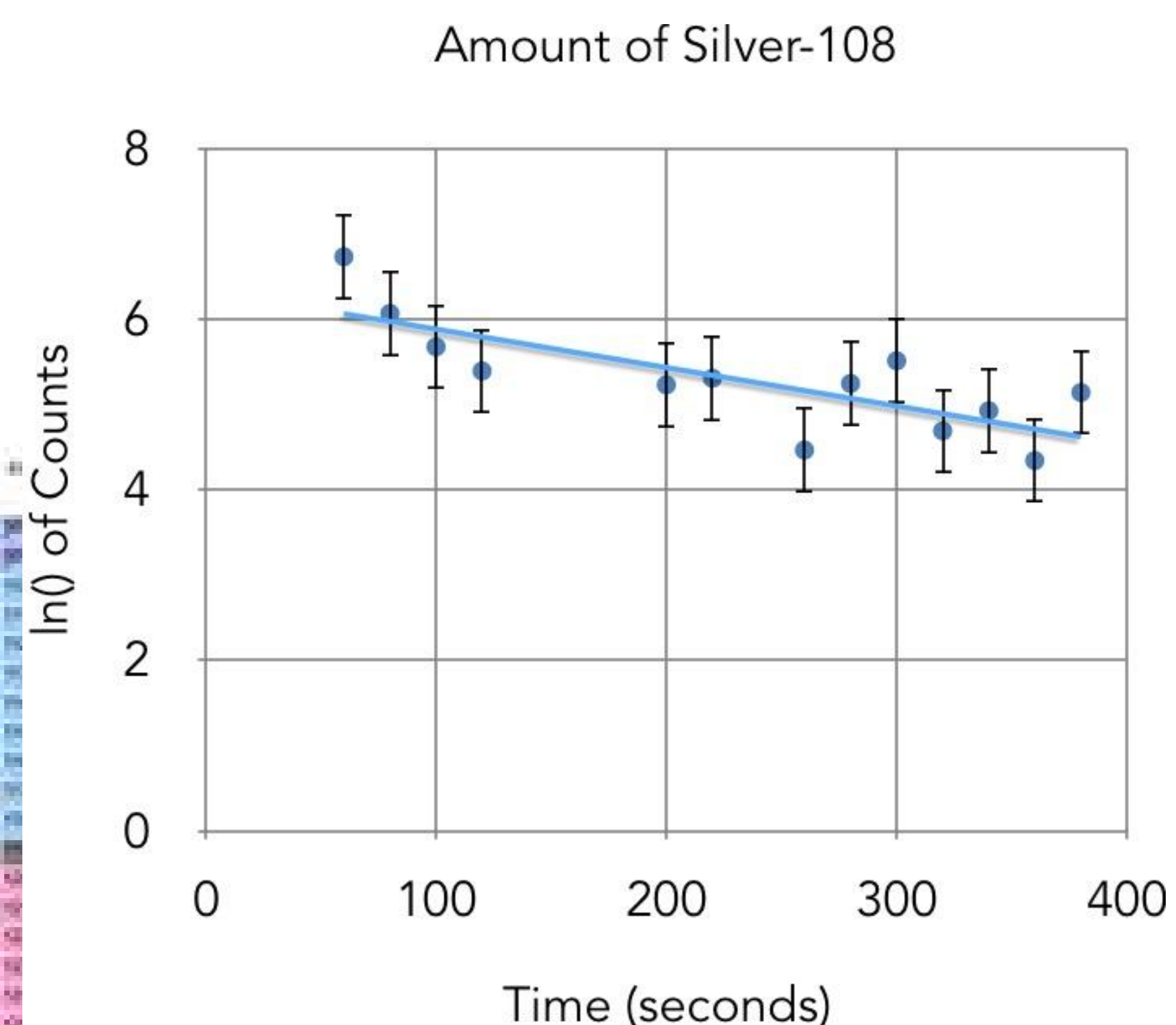
Energy of Cobalt-60

Energy of Manganese-54

We observed the peaks in gamma radiation and compared the energy to a database of known isotopes to determine what isotope it was. We found that the unknown sample was Manganese-54.

## Half-Life

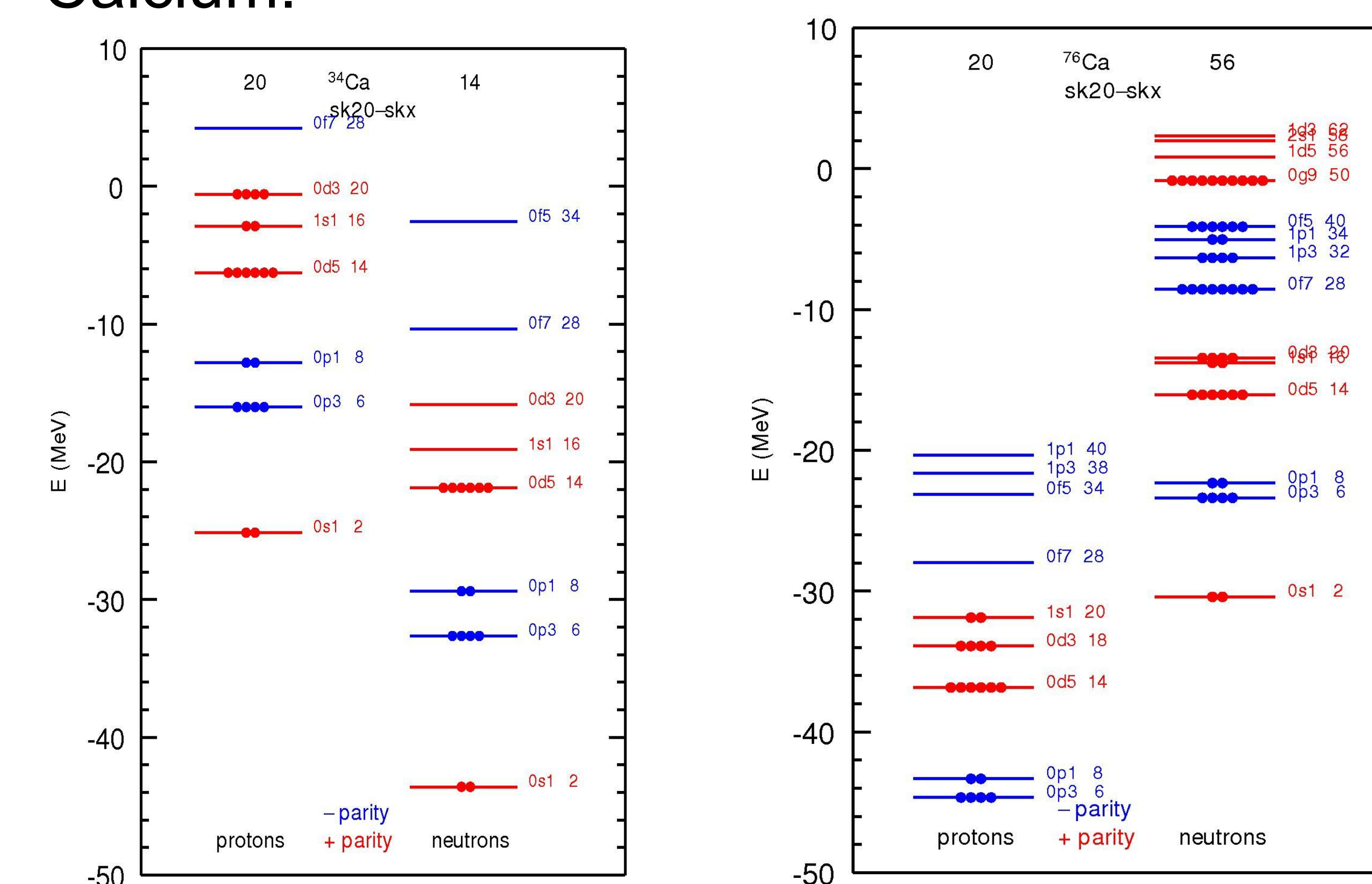
The purpose of this experiment was to identify the half-life of a silver isotope.



We used a known isotope to determine the voltage that is best for collecting data. Then, we used that voltage to count the decay of a silver isotope over time. With this data, we determined the half-life of the isotope was approximately 2 and a half minutes which then allowed us to conclude that the isotope was silver-108.

## Nuclear Density & Theory

The purpose of this experiment was to locate the proton and neutron dripline of Calcium.



We used a computer program to calculate energy levels of different calcium isotopes. We varied the amount of nucleons in order to find the maximum and minimum amount possible for calcium, otherwise known as the neutron dripline and proton dripline. We found that the proton dripline was calcium-34 and the neutron dripline was calcium-70.

