

## History of Atomic Structure Timeline

500 B.C.

1700's Isaac Newton

1808 John Dalton

1.

2.

3.

4.

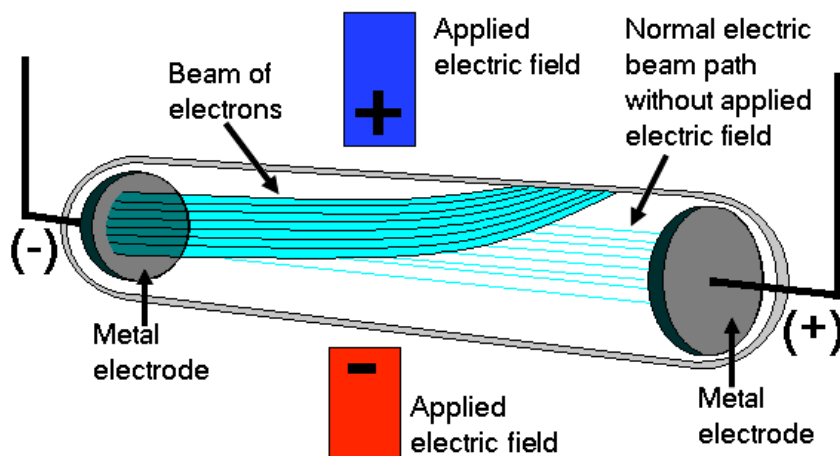
1860 Cavendish Laboratory for Experimental Physics/ Cambridge.

William Thomson (Lord Kelvin)

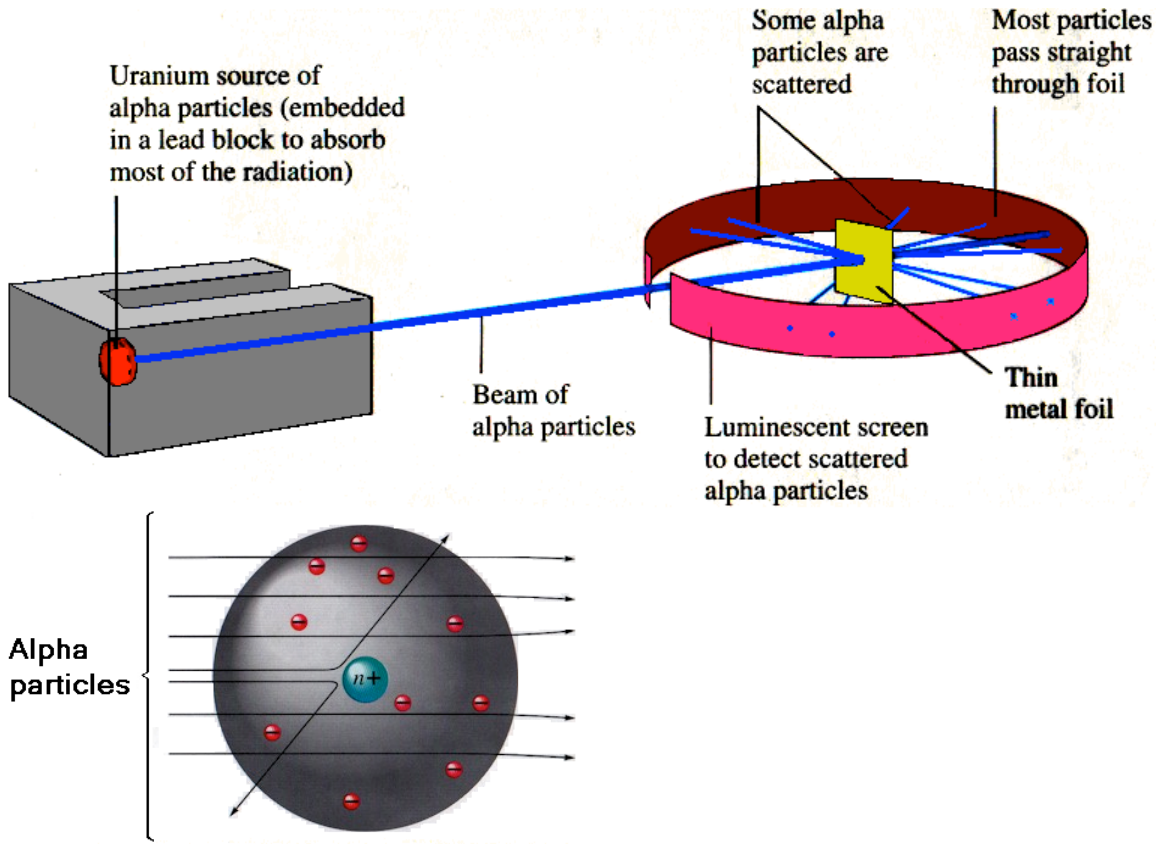
James Clerk Maxwell.

William Strutt (Lord Rayleigh)

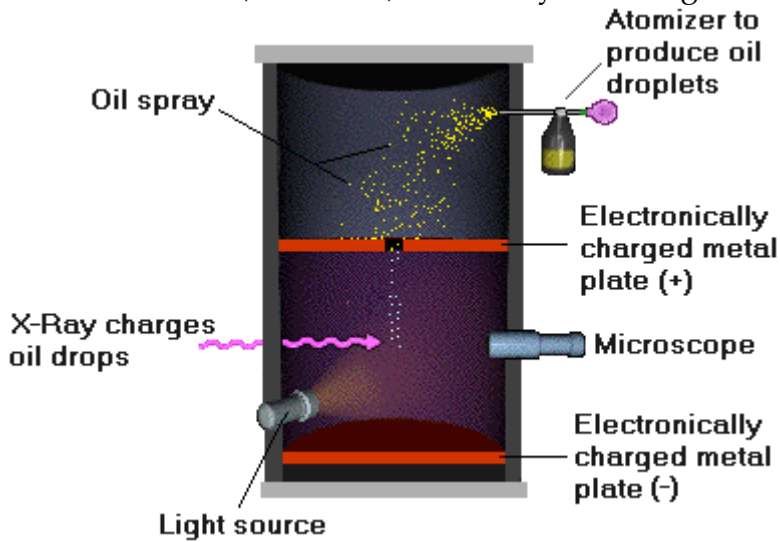
1897 J. J. Thomson (1856-1940)



1895 Ernest Rutherford (1871-1937).



Robert Millikan (1868-1953) University of Chicago



1930 James Chadwick (1891-1974)

Particle	Symbol	Charge	Mass (amu)	Mass (grams)
Proton				
Neutron				
Electron				

## Atomic Symbols

Species	atomic #	mass #	protons	neutrons	electrons
${}_{19}^{39}\text{K}$					
${}_{2}^{4}\text{He}$					
${}_{8}^{16}\text{O}$					
${}_{24}^{52}\text{Cr}$					
${}_{10}^{20}\text{Ne}$					
${}_{10}^{22}\text{Ne}$					

Species	atomic #	mass #	protons	neutrons	electrons
He <sup>2+</sup>					
	5				2
			47		
Ca <sup>2+</sup>					
		238			
			99		

### Calculating Isotopes:

1. You are given the mass spectrograph of the isotopes of neon. It states that you have 91% of neon 20, 0.2% of neon 21 and 8.8% of neon 22. Calculate the average atomic mass of neon.

2. There are two major isotopes of silver. They are silver 107 whose mass is 106.9509 which accounts for 51.83% of naturally occurring silver. The other isotope is silver 109 whose mass is 108.9047. What is the mass of naturally occurring silver?