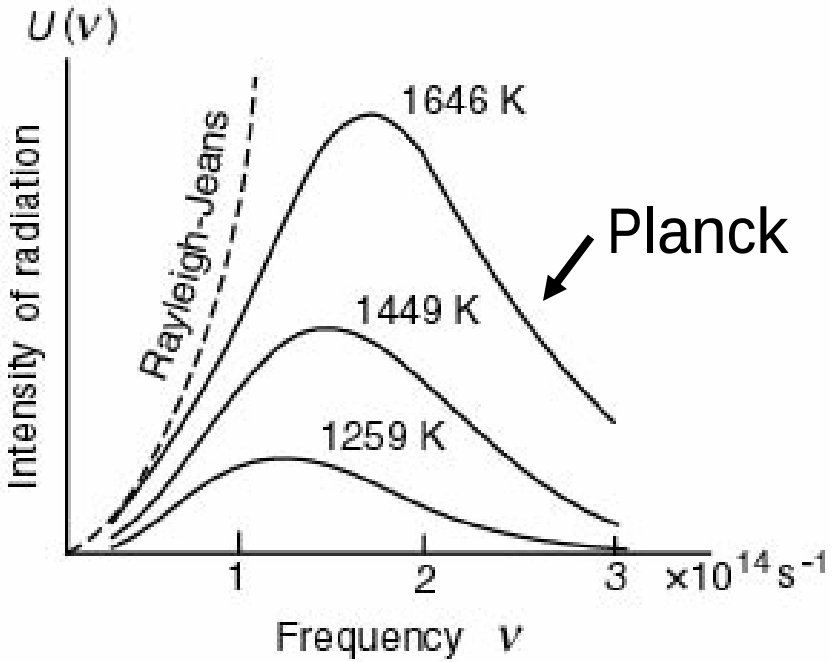
Black Body Radiation

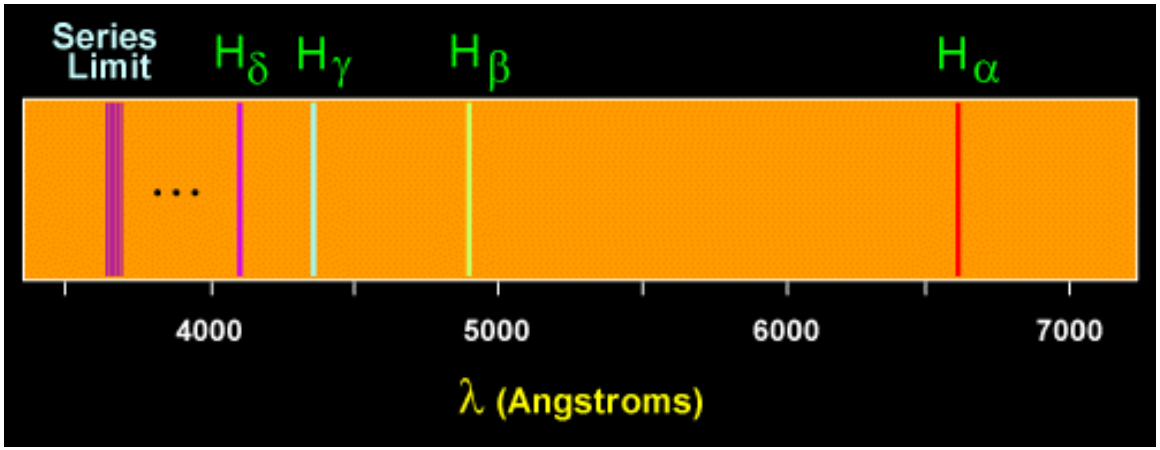
- Rayleigh & Jeans: Classical thermodynamics & statistical mechanics
- Max Planck: energy in discreet packets



Balmer Series

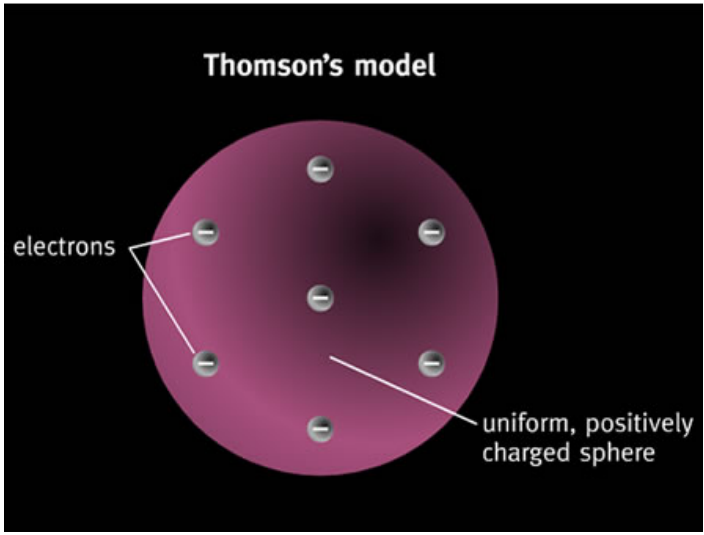
- Johann Jacob Balmer who (in 1885) found a series that fits wavelengths of the set of four emission lines (Hα, Hβ, Hγ, Hδ) from hydrogen

$$\nu_n = cR\left(\frac{1}{2^2} - \frac{1}{n^2}\right)$$

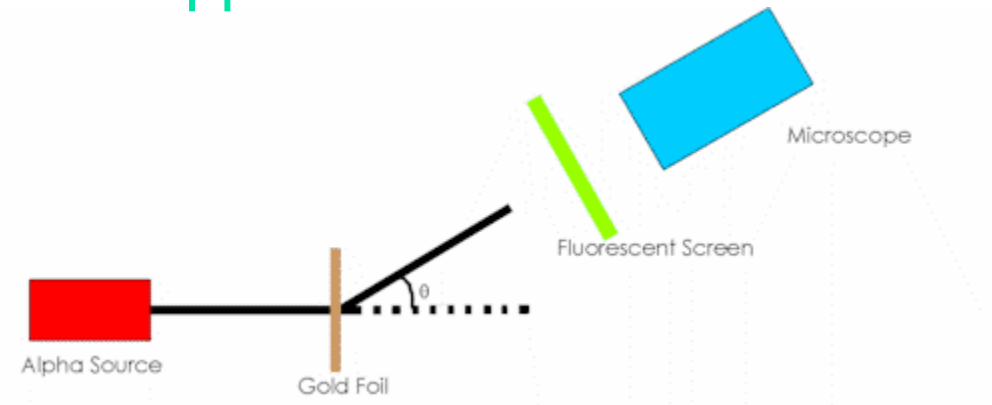


Rutherford Scattering

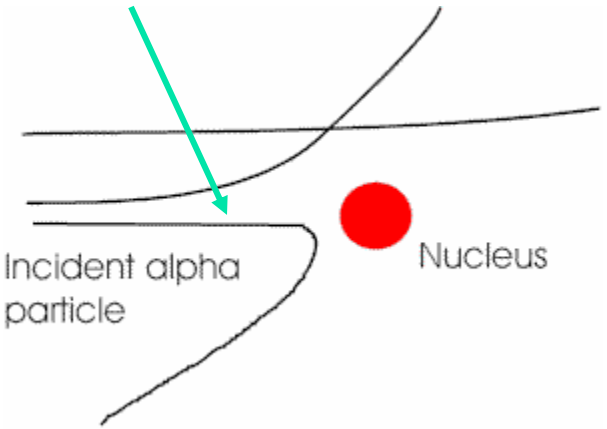
- Thompson model of the Atom
- In 1911 Rutherford showed that the positive charge was clustered in the center of the atom and not distributed



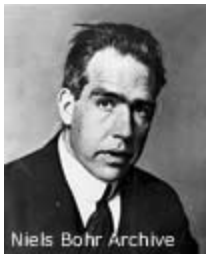
Apparatus



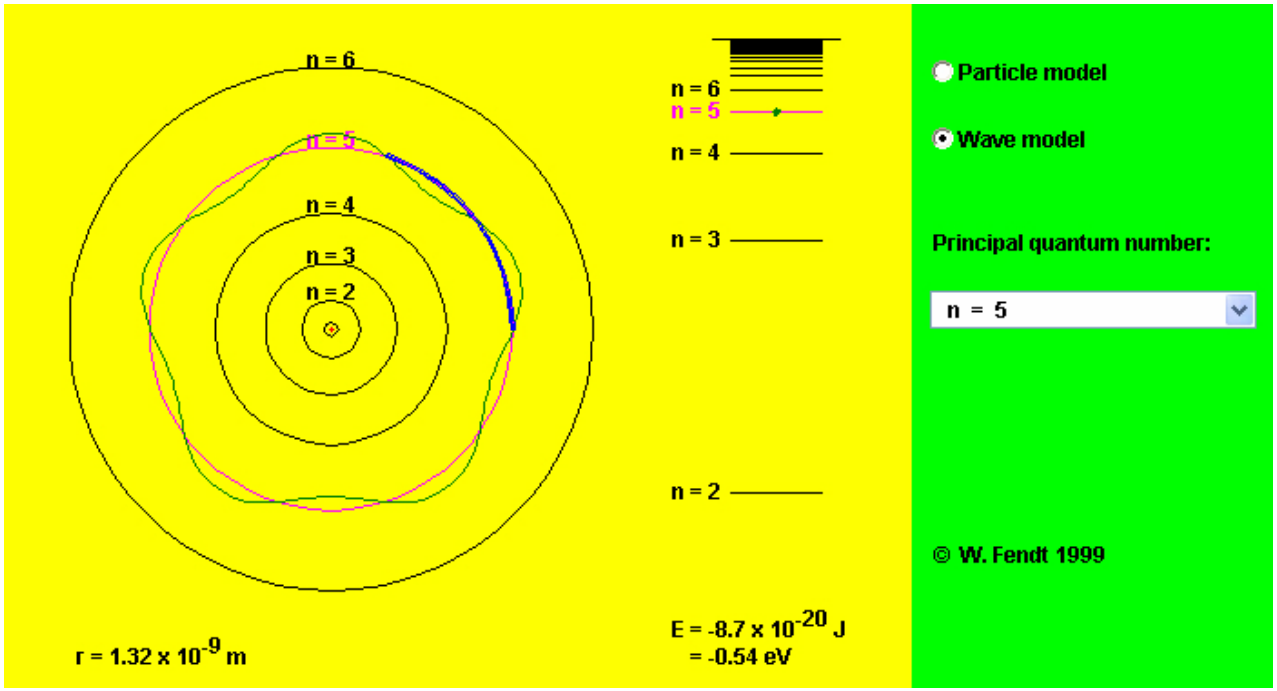
What he shouldn't have seen



The Bohr Picture



- Best way to view atom is that the electron “wave” must fit into orbit an integral number of times: (http://www.walter-fendt.de/ph11e/bohrh.htm)



Useful Information

- Course web page: http://physics.syr.edu/courses/PHY567-09/index.html
- My office is 329, hours: Generally, Monday & Wed. 3-4 pm, but you can either make an appointment or drop by at other times

Probability – Discrete Variables

- Example age distribution: 14, 15, 16, 16, 16, 22, 22, 24, 24, 25, 25, 25, 25, 25

3

2 2 5

- Histogram of Data

14 total people