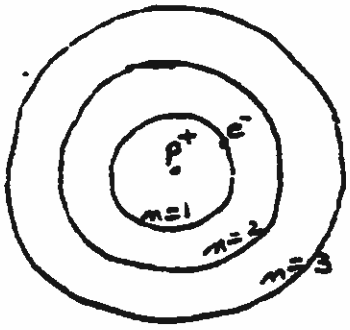
DEPARTMENT OF ASTRONOMY
University of Florida

AST 1002

LIGHT (cont)

Atomic Structure (Hydrogen Atom) - Bohr Model



$n = 1$ (ground state - lowest energy)

$n > 1$ excited states

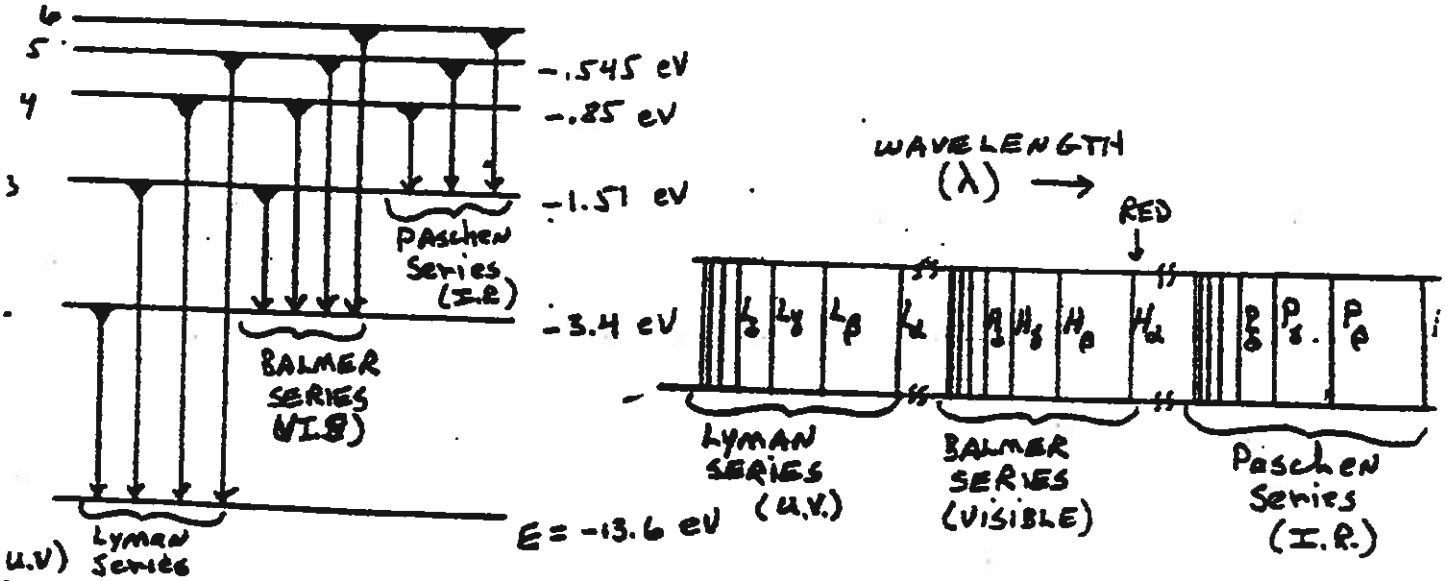
$E_n = \frac{-13.6}{n^2}$ (electron volts)

where E_n is the energy of the n^{th} level

The electron will change orbits only if an amount of energy equal to $E_2 - E_1$, $E_3 - E_1$, $E_4 - E_1$, $E_n - E_1$ is supplied. The energy difference (ΔE) can be supplied by a light particle (photon) which has energy given by the formula $E = hf = h\frac{c}{\lambda}$. h = Planck's Constant

NOTE! High frequency corresponds to large energy and short wavelength corresponds to large energy.

Energy Level Diagram



GRL:dpm
28 Sept 1982