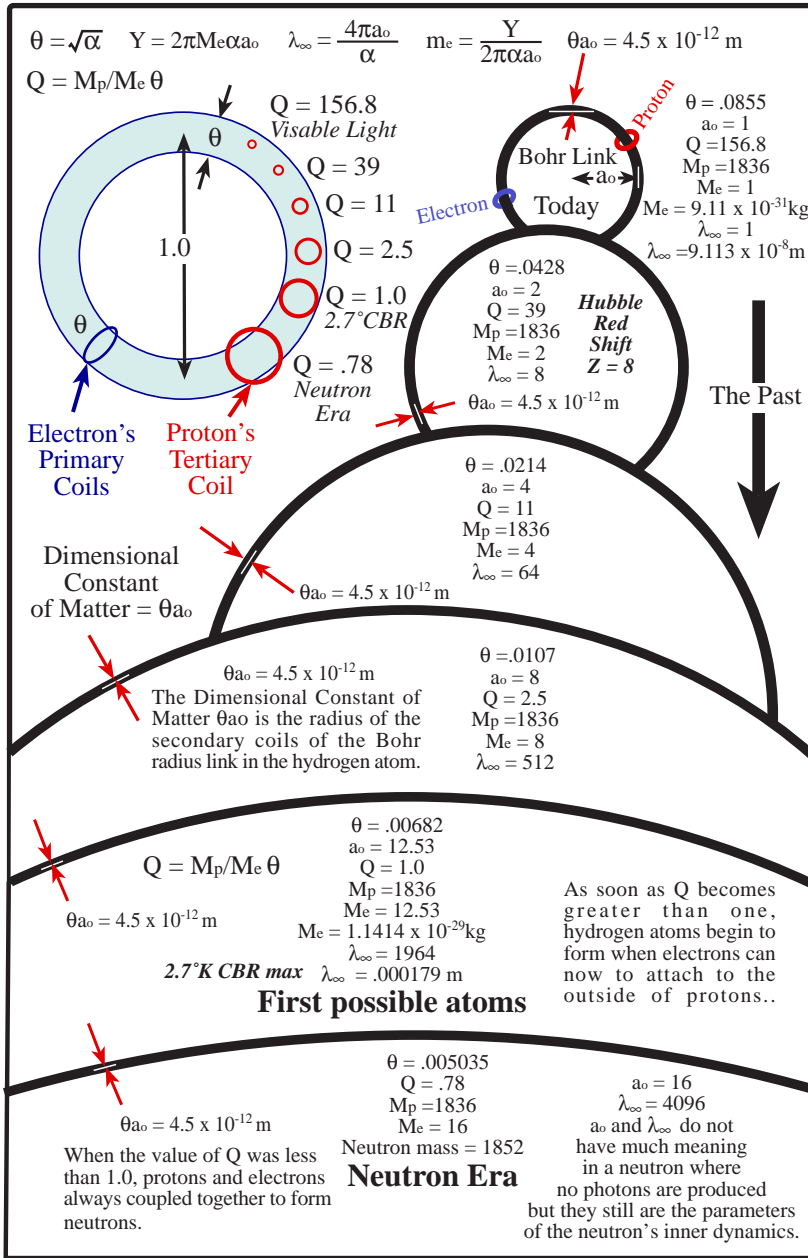


# HISTORY OF THE BOHR RADIUS



This drawing shows several stages in the life of the hydrogen atom since it first came into existence when Atomic Coil Clearance Q reached a value of  $M_p/M_e\theta = 1.0$ .

Prior to this point in time, the tertiary coil of the proton was larger than the primary coils of the electron. This made it impossible for the electron to couple to the outside of the proton and form a hydrogen atom. Instead the electron was held inside of the proton to form a neutron.

Once the value for Q became greater than 1.0 ( $M_e/M_p = \theta$ ) the interaction between protons and electrons completely changed. Now, for the first time, it became possible for an electron to couple to the outside of a proton and emit the photons of the hydrogen spectrum.

What had been a universe composed of an orderly cloud of  $2^{256}$  stable neutrons now became completely chaotic as the neutrons decayed and hydrogen atoms began forming and emitting photons.

At this point in time, the maximum energy photon  $\lambda_{\infty} = .000179 \text{ m}$  of the hydrogen atom was the same as the maximum energy photon of the 2.7°K CBR of today. The temperature of hydrogen radiation was then 2.7°K. With higher and higher values for Q and  $\theta$  and lower and lower values for the Bohr radius  $a_0$ , the photon spectrum grew more energetic and gradually heated the universe to today's hydrogen radiation temperature on the sun of about 6000°K.

The universe did not begin as a very hot "bang" and then cool off. Instead, the universe has a reverse entropy. It began at the very cold temperature of 2.7°K and has been heating up ever since.

The Dimensional Constant of Matter ( $\theta a_0$ ) is the radius of the secondary coils of the Bohr radius link in the hydrogen atom. This dimension of  $4.5 \times 10^{-12} \text{ m}$  is the only spacial constant to occur during the cosmological evolution of matter. This radius within the hydrogen atom had the same dimension at the beginning of atomic evolution as it does today.

## Absolute Constants (Unchanging Values)

$Y =$  Photon Mass-Length Constant =  $2.21022 \times 10^{-42} \text{ kg m}$   
 $Y = c \lambda_e M_e = c \lambda_p M_p = 2\pi M_e c \alpha a_0 = h/c$   
 $YC/2\pi =$  Photon Angular momentum =  $1.05457266 \times 10^{-34}$   
 $YC/2\pi = M_e C \alpha a_0 = mvr = h/2\pi$   
 $\theta a_0 =$  Dimensional Constant of Matter =  $4.5204726 \times 10^{-12} \text{ m}$   
 $C =$  Speed of light =  $299,792,458 \text{ m/sec}$

## Evolving Constants (Today's Values)

$\alpha =$  Fine Structure constant =  $\theta^2 = .00729735308$   
 $a_0 =$  Bohr Radius =  $5.29177249 \times 10^{-11} \text{ m}$   
 $M_e =$  Electron Mass =  $9.1093897 \times 10^{-31} \text{ kg}$   
 $c \lambda_e =$  Compton Electron  $\lambda = 2.42631058 \times 10^{-12} \text{ m}$   
 $M_p =$  Proton Mass =  $1.6726231 \times 10^{-27} \text{ kg}$   
 $c \lambda_p =$  Compton  $\lambda$  of Proton =  $1.32141 \times 10^{-15} \text{ m}$   
 $\lambda_{\infty} =$  Hydrogen wavelength  $4\pi a_0 / \theta^2 = 9.113 \times 10^{-8} \text{ m}$   
 $Q =$  Atomic Coil Clearance =  $M_p / M_e \theta = 156.8$   
 $\theta =$  Circlon Constant =  $.085424546 = 1/11.70623$

## Evolving Constants @ First Possible Atom

$\alpha =$  Fine Structure constant =  $\theta^2 = 4.65172 \times 10^{-5}$   
 $a_0 =$  Bohr Radius =  $6.6253 \times 10^{-10} \text{ m}$   
 $M_e =$  Electron Mass =  $1.1414 \times 10^{-29} \text{ kg}$   
 $c \lambda_e =$  Compton Electron  $\lambda = 1.9364011 \times 10^{-13} \text{ m}$   
 $M_p =$  Proton Mass =  $1.6726231 \times 10^{-27} \text{ kg}$   
 $c \lambda_p =$  Compton  $\lambda$  of Proton =  $1.32141 \times 10^{-15} \text{ m}$   
 $\lambda_{\infty} =$  Hydrogen wavelength  $4\pi a_0 / \theta^2 = .000179 \text{ m}$   
 $Q =$  Atomic Coil Clearance =  $M_p / M_e \theta = 1.0$   
 $\theta =$  Circlon Constant =  $\sqrt{\alpha} = 6.820352 \times 10^{-3}$