**Mass Defect**

**M. Defect: Is a theory that the mass of any nucleus of an atom is less than the sum of the Protons + Neutrons.**

**Why?**

 **The mass of a Proton** (1.00728 AMU) **is not equal to the mass of a Neutron** (1.00866 AMU).

 **Therefore the mass of one carbon atom (6 protons and 6 Neutrons is:**

**(1.00728 x 6)+(1.00866 x 6) = 12.09564 AMU.**

**Why doesn’t this match the atomic mass on the P. table?**

 **According to the theory when Protons and Neutron are around each other some of there mass is converted into energy (Fusion).**

 **When Carbon was originally formed it lost some mass because it transferred to energy.**

**How much mass did Carbon loose?**

**12.09564 – 12.0107 = .08494 AMU.**

**Starting mass Mass after the transfer to energy.**