gravitational constant $= 6.67 \times 10^{-11}$ N m^2/ kg ^{2} solar mass $M_\odot = 1.99 \times 10^{30}$ kg

1 light year $= 9.46 \times 10^{15}$ m 1 year $= 3.16 \times 10^7$ seconds

Boltzmann constant $= 1.38 \times 10^{-23}$ J/K Coulomb law constant $= 8.99 \times 10^9$ N m^2/C^2

$h =$ Planck constant $= 6.63 \times 10^{-34}$ J s $\hbar = h/2\pi$ $e = 1.60 \times 10^{-19}$ Coulomb

$\sigma =$ Stefan-Boltzmann constant $= 5.67 \times 10^{-8} W/(\text{m}^2\ \text{K}^4)$

Wien displacement law constant $= 0.290$ cm K $N_A = 6.022 \times 10^{23}$ mole^{-1}

mass of electron $= 9.11 \times 10^{-31}$ kg

mass of neutron $= 1.6749 \times 10^{-27}$ kg mass of proton $= 1.6726 \times 10^{-27}$ kg

1 eV $= 1.60 \times 10^{-19}$ Joule 1 MeV $= 10^6$ eV $c =$ speed of light $= 3.00 \times 10^8$ m/s

1 nm $= 10^{-9}$ m 1 Å$= 10^{-10}$ m 1 fermi $= 10^{-5}$ Å