Table of Data Used

(Data not listed in Giancoli "Physics" 5th ed.)

Jupiter mass 1.90 x 10^27 kg
radius 7.1 x 10^7 m
distance from Sun:
5.203 AU
7.8 x 10^10 m
Orbit period: 11.86 years

Pluto mass 1.29 x 10^22
radius 2.3 x 10^6 m
distance from Sun:
39.53 AU
5.9 x 10^11 m
Orbit period: 247.7 years

Mercury
mass 3.3 x 10^23 kg
distance from sun:
0.387 AU
5.8 x 10^10 m
Orbit period: 87.97 days

Proxima Centauri
Distance from Sun: 4.22 ly

Milky Way (approx)
Distance sun to center.
28,000 ly
Radius
45,000 ly

Distance to Andromeda galaxy:

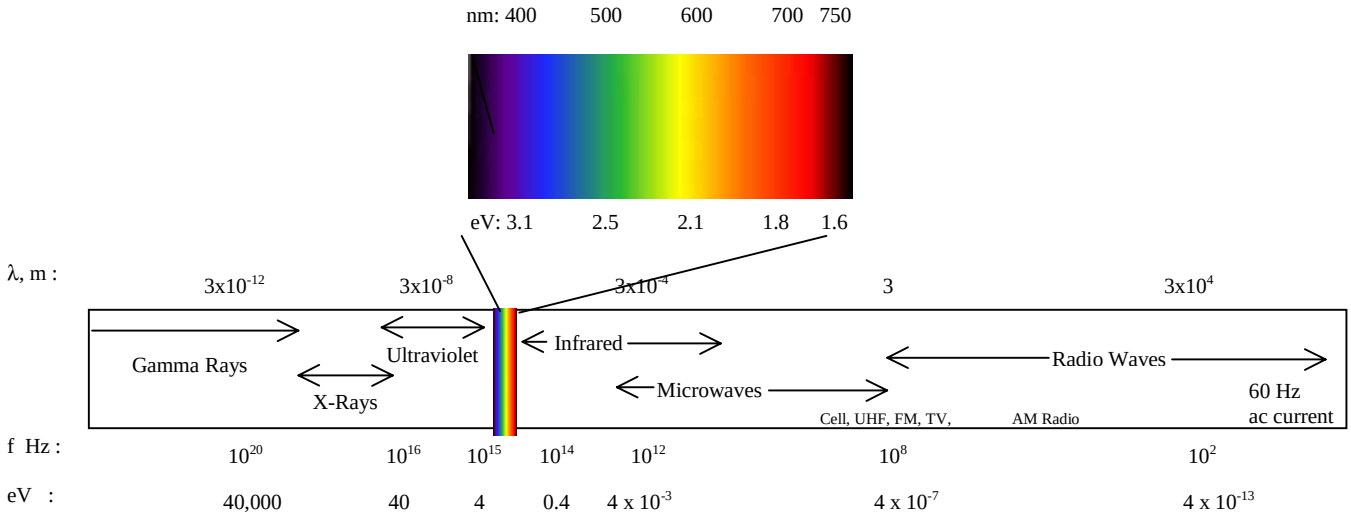
muon (μ) 105.6 MeV/c^2

Fundamental Constants

$c = 3 \times 10^8$ m/s
$G = 6.67 \times 10^{-11}$ Nm^2/kg^2
$e = 1.6 \times 10^{-19}$ C
$k = 8.617 \times 10^{-5}$ eV/K Boltzmann constant
$k = 9 \times 10^9$ Nm^2/C^2 Coulomb constant
$\sigma = 5.67 \times 10^{-8}$ W/m^2K^4 Stefan-Boltzmann constant
$\lambda_{max} = (2.90 \times 10^{-3}\ K\ m)/T$ Wien's Displacement Law

$1\ eV = 1.6 \times 10^{-19}$ J
$1\ Å = 0.1\ nm = 10^{-10}$m (Angstrom)
$1\ nm = 10^{-9}$ m (nanometer)

Electromagnetic Spectrum



Masses	**kg**	**MeV/c²**	
electron	9.11×10^{-31}	0.511	
proton	1.6726×10^{-27}	938.3	
neutron	1.6749×10^{-27}	939.6	
Planck mass	2.1×10^{-8}	1.2×10^{22}	$= (\hbar c/G)^{1/2}$
Planck length	1.6×10^{-35} m	$= (\hbar G/c^3)^{1/2}$	
Planck time	5.4×10^{-44} s	$= (\hbar G/c^5)^{1/2}$	
Planck temp.	1.4×10^{32} K	$= 1/k(\hbar c^5/G)^{1/2}$	