

Table 1.

RELATIONS	
1 Angstrom	= 10^{-10} meter
1 nanometer	= 10^{-9} meter
1 micron	= 10^{-6} meter
1 centimeter	= 10^{-2} meter
1 kilometer	= 10^3 meters
CONSTANTS	
speed of light	$c = 3 \times 10^5$ km/sec
radius of Moon	$R = 1738$ km
radius of Earth	$R = 6378$ km
radius of Sun	$R = 696,000$ km
distance from Earth to Moon	$d = 3.84 \times 10^5$ km
astronomical unit	$1 \text{ AU} = 1.5 \times 10^8$ km
parsec (3.26 light years)	$1 \text{ pc} = 206265 \text{ AU} = 3.1 \times 10^{13}$ km
CIRCLES AND SPHERES	
circle diameter	$D = 2R$
circle circumference	$C = 2\pi R$
circle area	$A = \pi R^2$
sphere diameter	$D = 2R$
sphere circumference	$C = 2\pi R$
sphere surface area	$A = 4\pi R^2$
sphere volume	$V = (4/3)\pi R^3$

Table 2.

ASTRONOMY EQUATIONS	
distance traveled	$d = vt$
distance to an object	$d_{\text{parsecs}} = 1/\text{parallax}_{\text{arcsec}}$
Kepler's Third Law	$M_{\text{total,Suns}} = a_{\text{AU}}^3/P_{\text{years}}^2$
Newton's Second Law	$F = ma$
weight on planet	$W_{\text{planet}} = g_{\text{surface}} W_{\text{Earth}}$
Law of Gravitation	$F_g = Gm_1m_2/R^2$
flux (of light)	$\text{flux} \propto 1/R^2$
gravitational force	$\text{grav} \propto 1/R^2$
electric field strength	$\text{elec} \propto 1/R^2$
magnetic field strength	$\text{magn} \propto 1/R^2$
photon wavelength and frequency	$c = \lambda\nu$
photon energy	$E_{\text{photon}} = h\nu$
brightness of an object	$m_{\text{apparent}} - M_{\text{absolute}} = 5 \times \log(d_{\text{pc}}/10 \text{ pc})$
peak radiation (Wein's Law)	$\lambda_{\text{max,microns}} = 2900/T_{\text{Kelvin}}$
luminosity of an object (Stefan's Law)	$L_{\text{Suns}} = 4\pi R_{\text{Suns}}^2 \times \sigma T_{\text{Suns}}^4$
lifetime of a star	$\text{lifetime} \propto M_{\text{Suns}}/L_{\text{Suns}}$
Universe's expansion	$v_{\text{km/sec}} = H_o \times d_{\text{Mpc}}$
telescope angular resolution	$\text{res}_{\text{arcsec}} = 0.25 \lambda_{\text{microns}}/D_{\text{telescope,meters}}$