



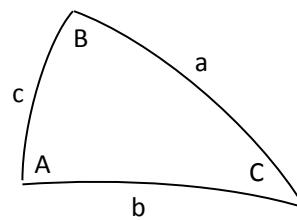
Astronomical and Physical Constants

Astronomical unit (AU)	1.4960×10^{11} m
Light year (ly)	9.4605×10^{15} m = 63 240 au
Parsec (pc)	3.0860×10^{16} m = 206 265 au
Jansky (Jy)	10^{-26} W m ⁻² Hz ⁻¹
1 Å	10^{-10} m
1 erg	10^{-7} J
1 dyne	10^{-5} N
Mass of Earth	5.9736×10^{24} kg
Mean radius of Earth	6.371×10^6 m
Equatorial radius of Earth	6.378×10^6 m
Mass of Moon	7.3490×10^{22} kg
Radius of Moon	1.737×10^6 m
Mass of Jupiter	1.89813×10^{27} kg
Mean Earth – Moon distance	3.844×10^8 m
Mass of Sun	1.98892×10^{30} kg
Radius of Sun	6.96×10^8 m
Effective temperature of the Sun	5780 K
Luminosity of the Sun	3.96×10^{26} J s ⁻¹
Solar constant	1366 W m ⁻²
Angular diameter of the Sun	30'
Speed of light in vacuum (c)	2.9979×10^8 m s ⁻¹
Gravitational constant (G)	6.6738×10^{-11} N m ² kg ⁻²
Boltzmann constant (k)	1.381×10^{-23} m kg s ⁻² K ⁻¹
Universal gas constant (R)	8.31 J K ⁻¹ mol ⁻¹
Stefan–Boltzmann constant (σ)	5.6704×10^{-8} kg s ⁻³ K ⁻⁴
Planck constant (h)	6.6261×10^{-34} J s
electron charge (e)	1.602×10^{-19} C
Mass of hydrogen atom	1.67×10^{-27} kg
Current inclination of the ecliptic (ε)	23° 26.3'
Coordinates of the northern ecliptic pole for epoch 2000.0 ($α_E, δ_E$)	$18^{\text{h}} 00^{\text{m}} 00^{\text{s}}$, + 66° 33.6'
Coordinates of the northern galactic pole for epoch 2000.0 ($α_G, δ_G$)	$12^{\text{h}} 51^{\text{m}}$, + 27° 08'



Basic equations of spherical trigonometry

$$\begin{aligned}\sin a \sin B &= \sin b \sin A \\ \sin a \cos B &= \cos b \sin c - \sin b \cos c \cos A, \\ \cos a &= \cos b \cos c + \sin b \sin c \cos A.\end{aligned}$$



Rayleigh-Jeans formula (long wavelength approximation of Planck's Law):

$$B_\nu(T) = \frac{2kT\nu^2}{c^2}$$