Eureka
Scientific

EUREKA SCIENTIFIC, INC.
2452 Delmer Street, Suite 100
Oakland, CA 94602
(510) 530-1688
FAX: (510) 530-2416

PHYSICAL AND ASTRONOMICAL CONSTANTS

Velocity of light	c	=	2.998×10^{10} cm s^{-1}
Gravitational constant	G	=	6.673×10^{-8} dyne cm^{+2} s^{-2}
Planck's constant	h	=	6.626×10^{-27} erg s
Electron charge	e	=	4.803×10^{-10} esu
		=	1.602×10^{-19} coulomb
Mass of electron	m_e	=	9.110×10^{-28} g
Boltzmann constant	k	=	1.381×10^{-16} erg K^{-1}
Avogadro's number	N	=	6.022×10^{23} $mole^{-1}$
Rydberg constant	R_∞	=	$2\pi^2 m_e e^4/ch^3$
		=	1.097×10^5 cm^{-1}
Proton mass	M_p	=	1.673×10^{-24} g
		=	1.007 amu
Thompson cross-section	$8\pi r_e^2/3$	=	6.652×10^{-25} cm^{-2}
Stefan-Boltzmann constant	σ	=	5.670×10^{-5} erg cm^{-2} K^{-4} s^{-1}
Solar mass	$M_\odot$	=	1.989×10^{33} gm
Solar radius	$R_\odot$	=	6.960×10^{10} cm
Solar luminosity	$L_\odot$	=	3.826×10^{33} erg s^{-1}
Earth mass	$M_\oplus$	=	5.976×10^{27} gm
Earth equatorial radius	$R_\oplus$	=	6.378×10^3 km
Gravity at earth's surface	$g_\oplus$	=	9.807×10^2 cm s^{-2}
Astronomical unit	AU	=	1.496×10^{13} cm
parsec	pc	=	3.262 light years
		=	3.086×10^{18} cm
light year	lyr	=	9.461×10^{17} cm
Rayleigh	Ry	=	$(1/4\pi) \times 10^6$ photons/cm^2/s/sr
Jansky	Jy	=	10^{-26} watts/m^2/Hz
steradian	sr	=	3.283×10^3 deg^2
		=	1.182×10^7 $arcmin^2$
		=	4.255×10^{10} $arcsec^2$
degree		=	1.745×10^{-2} radian
arcmin		=	2.909×10^{-4} radian
arcsec		=	4.848×10^{-6} radian
deg^2		=	3.046×10^{-4} steradian
$arcmin^2$		=	8.462×10^{-8} steradian
$arcsec^2$		=	2.350×10^{-11} steradian