



Physical, orbital* and observational characteristics of selected Solar System bodies

*Orbital characteristics are given respective to the primary body of the satellite.

	Sun	Venus	Earth	Moon	Mars	Jupiter	Saturn
Mass / kg	1.989×10^{30}	4.868×10^{24}	5.972×10^{24}	7.347×10^{22}	6.417×10^{23}	1.898×10^{27}	5.683×10^{26}
Mean radius / m	6.957×10^8	6.052×10^6	6.371×10^6	1.737×10^6	3.390×10^6	6.991×10^7	5.823×10^7
Sidereal rotation period	25.38 days (16°) 25.05 days (eq.)	-243.025 days	23.935 hours	27.322 days	24.623 hours	9.925 hours	10.656 hours
Orbital semi-major axis / m	7.98 ± 0.20 kpc	1.082×10^{11}	1.496×10^{11}	3.844×10^8	2.279×10^{11}	7.786×10^{11}	1.433×10^{12}
Orbital period	240 ± 10 Myr	224.70 days	365.26 days	27.322 days	686.98 days	11.86 years	29.46 years
Orbital eccentricity	-	0.0067	0.0167	0.0549	0.0935	0.0489	0.0565
Apparent visual magnitude	-26.74	-4.38 (cresc.) -3.82 (full)	-	-12.74 (full)	-2.0 (at opp.) -2.91 (max)	-2.7 (at opp.) -2.94 (max)	0.7 (at opp.) 0.43 (max)

Universal constants		Units and Physical Quantities	
Speed of light	$c = 2.998 \times 10^8 \text{ m s}^{-1}$	1 inch	$= 2.54 \text{ cm}$
Universal Gravitational Constant	$G = 6.674 \times 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$	1 Astronomical Unit (A.U.)	$= 1.496 \times 10^{11} \text{ m}$
Planck constant	$h = 6.626 \times 10^{-34} \text{ J s}$	1 light year (ly)	$= 9.461 \times 10^{15} \text{ m}$
Permittivity of free space	$\epsilon_0 = 8.854 \times 10^{-12} \text{ F m}^{-1}$	1 parsec (pc)	$= 3.086 \times 10^{16} \text{ m} = 3.262 \text{ ly}$
Permeability of free space	$\mu_0 = 4\pi \times 10^{-7} \text{ H m}^{-1}$	Solar luminosity	$L_{\odot} = 3.828 \times 10^{26} \text{ W}$
Stefan-Boltzmann constant	$\sigma = 5.670 \times 10^{-8} \text{ W m}^{-2} \text{ K}^{-4}$	1 sidereal day	$= 23^{\text{h}} 56^{\text{m}} 4.1^{\text{s}}$
Boltzmann constant	$k_B = 1.381 \times 10^{-23} \text{ J K}^{-1}$	Gravitational acceleration	$g = 9.81 \text{ m s}^{-2}$
Elementary charge	$e = 1.602 \times 10^{-19} \text{ C}$	Obliquity of the ecliptic	$\epsilon = 23^{\circ} 26'$
Hubble's constant	$H_0 = 67.80 \pm 0.77 \text{ km s}^{-1} \text{ Mpc}^{-1}$	Diameter of human pupil	$= 6 \text{ mm}$ (fully dark-adapted)
Avogadro's constant	$N_A = 6.02 \times 10^{23} \text{ mol}^{-1}$	Rest mass of proton	$m_p = 1.673 \times 10^{-27} \text{ kg}$
Molar gas constant	$R = 8.31 \text{ J K}^{-1} \text{ mol}^{-1}$	Rest mass of neutron	$m_n = 1.675 \times 10^{-27} \text{ kg}$
Wien's displacement constant	$b = 2.898 \times 10^{-3} \text{ m K}$	Rest mass of electron	$m_e = 9.109 \times 10^{-31} \text{ kg}$