

PHYSICAL DATA

UNITS

SI base units: **m** meter (length) **s** second (time) **kg** kilogram (mass) **A** ampere (current) **K** kelvin (temperature)
cd candela (luminous intensity) **mol** mole (substance amount)

Derived units: **rad** radian (angle) **Hz** hertz (frequency) **C** coulomb (charge) **V** volt (voltage) Ω ohm (resistance)
F farad (capacitance) **H** henry (inductance) **Wb** weber (magnetic flux) **T** tesla (magnetic field) **N** newton (force)
Pa pascal (pressure) **J** joule (energy) **eV** electron volt (energy) **W** watt (power) **Bq** becquerel (radioactivity) **1** unitless

FUNDAMENTAL CONSTANTS

Speed of light	$c = 3.00 \cdot 10^8 \text{ m/s}$
Gravitational constant	$G = 6.67 \cdot 10^{-11} \text{ N} \cdot \text{m}^2/\text{kg}^2$
Avogadro's number	$N_A = 6.02 \cdot 10^{23} \text{ mol}^{-1}$
Gas constant	$R = 8.314 \text{ J}/(\text{mol} \cdot \text{K})$
Boltzmann's constant	$k = 1.38 \text{ J/K}$
Stefan-Boltzmann's constant	$\sigma = 5.67 \cdot 10^{-8} \text{ W}/(\text{m}^2 \cdot \text{K}^4)$
Permittivity	$\epsilon_0 = 8.85 \cdot 10^{-12} \text{ C}^2/(\text{N} \cdot \text{m}^2)$
Permeability	$\mu_0 = 4\pi \cdot 10^{-7} \text{ T} \cdot \text{m/A}$
Planck's constant	$h = 6.63 \cdot 10^{-34} \text{ J} \cdot \text{s}$
Electron charge	$e = 1.60 \cdot 10^{-19} \text{ C}$
Electron mass	$m_e = 9.11 \cdot 10^{-31} \text{ kg}$
Proton mass	$m_p = 1.67 \cdot 10^{-27} \text{ kg}$

ASTRONOMICAL DATA				
	<i>Mean orbit</i>	<i>Period</i>	<i>Mass</i>	<i>Radius</i>
	<i>m</i>	<i>years</i>	<i>kg</i>	<i>m</i>
Sun			$1.99 \cdot 10^{30}$	$6.96 \cdot 10^8$
Moon	$3.84 \cdot 10^8$	<i>27.3 days</i>	$7.36 \cdot 10^{22}$	$1.74 \cdot 10^6$
Earth	$1.50 \cdot 10^{11}$	1.00	$5.98 \cdot 10^{24}$	$6.37 \cdot 10^6$
Mercury	$5.79 \cdot 10^{10}$	0.241	$3.18 \cdot 10^{23}$	$2.43 \cdot 10^6$
Venus	$1.08 \cdot 10^{11}$	0.615	$4.88 \cdot 10^{24}$	$6.06 \cdot 10^6$
Mars	$2.28 \cdot 10^{11}$	1.88	$6.42 \cdot 10^{23}$	$3.37 \cdot 10^6$
Jupiter	$7.78 \cdot 10^{11}$	11.9	$1.90 \cdot 10^{27}$	$6.99 \cdot 10^7$
Saturn	$1.43 \cdot 10^{12}$	29.5	$5.68 \cdot 10^{26}$	$5.85 \cdot 10^7$
Uranus	$2.87 \cdot 10^{12}$	84.0	$8.68 \cdot 10^{25}$	$2.33 \cdot 10^7$
Neptune	$4.50 \cdot 10^{12}$	165	$1.03 \cdot 10^{26}$	$2.21 \cdot 10^7$