

Physical Constants

The following table comes from *Astrophysical Formulae* by Kenneth R. Lang, California Institute of Technology, Pasadena, California and Tufts University, Medford, Massachusetts.

Symbol	Meaning	Value
c	Speed of light in vacuum	$2.997924562(11) \times 10^{10} \text{ cm sec}^{-1}$
$h = 2\pi\hbar$	Planck's constant	$6.626196(50) \times 10^{-27} \text{ erg s}$
$\hbar = h / 2\pi$	Rationalized Planck's constant	$1.0545919(80) \times 10^{-27} \text{ erg s}$
k	Boltzmann's constant	$1.380622(59) \times 10^{-16} \text{ erg K}^{-1}$
e	Elementary charge of an electron	$4.803250(21) \times 10^{-10} \text{ ESU}$
m_e	Rest mass of the electron	$9.109558(54) \times 10^{-28} \text{ g}$
G	Gravitational constant	$6.6732(31) \times 10^{-8} \text{ dyne cm}^2 \text{ g}^{-2}$
N_A	Avogadro's number	$6.022169(40) \times 10^{23} \text{ mole}^{-1}$
a.m.u. = u	Atomic mass unit	$1.660531(11) \times 10^{-24} \text{ g}$
α	Fine-structure constant	$7.297351(11) \times 10^{-3}$
e / m	Electron charge-to-mass ratio	$5.272759(16) \times 10^{17} \text{ esu g}^{-1}$
R_{∞}	Rydberg constant	$1.09737312(11) \times 10^5 \text{ cm}^{-1}$
a_0	Bohr radius	$5.2917715(81) \times 10^{-9} \text{ cm}$
$h / (mc)$	Compton wavelength	$2.4263096(74) \times 10^{-10} \text{ cm}$
$r_0 = e^2 / (mc^2)$	Classical electron radius	$2.817939(13) \times 10^{-13} \text{ cm}$
R	Gas constant	$8.31434(35) \times 10^7 \text{ erg K}^{-1} \text{ mole}^{-1}$
σ	Stefan-Boltzmann constant	$5.66961(96) \times 10^{-5} \text{ erg cm}^{-2} \text{ s}^{-1} \text{ K}^{-4}$
σ_T	Thomson cross section	$6.652453(62) \times 10^{-25} \text{ cm}^2$
au	Astronomical unit	$1.49597892(1) \times 10^{13} \text{ cm}$
pc	Parsec	$3.0856(1) \times 10^{18} \text{ cm}$
ly	Light year	$9.4605 \times 10^{17} \text{ cm} = 6.324 \times 10^4 \text{ au}$
M_{\odot}	Solar mass	$1.989(2) \times 10^{33} \text{ g}$
R_{\odot}	Solar radius	$6.9598(7) \times 10^{10} \text{ cm}$