Physical & Astronomical Constants

Gravitational constant	$G = 6.67 \times 10^{-8}$ cm^{3}g^{-1}s^{-2}, $\times 10^{-11}$ m^3 kg^{-1} s^{-2}
Boltzmann constant	$k = 1.380658 \times 10^{-16}$ erg K^{-1}, $\times 10^{-23}$ J K^{-1}
Stefan-Boltzmann constant	$\sigma = 5.67051 \times 10^{-5}$ erg s^{-1} cm^{-2} K^{-4}, $\times 10^{-8}$ J s^{-1} m^{-2} K^{-4}
Planck constant	$h = 6.6260755 \times 10^{-27}$ erg s, $\times 10^{-34}$ Js
Speed of light	$c = 2.99792458 \times 10^{10}$ cm/s, $\times 10^{8}$ m/s
Electron mass	$m_e = 9.1093897 \times 10^{-28}$ g, $\times 10^{-31}$ kg
Proton mass	$m_p = 1.6726231 \times 10^{-24}$ g, $\times 10^{-27}$ kg
Neutron mass	$m_n = 1.674929 \times 10^{-24}$ g, $\times 10^{-27}$ kg
Hydrogen mass	$m_H = 1.673534 \times 10^{-24}$ g, $\times 10^{-27}$ kg
Atomic mass unit	$u = 1.6605402 \times 10^{-24}$ g, $\times 10^{-27}$ kg
Quantum electric charge	$e = 4.803206 \times 10^{-10}$ esu, $1.60217733 \times 10^{-19}$ C
Earth mass	$M_\oplus = 5.97223 \times 10^{27}$ g, $\times 10^{24}$ kg
Earth radius	$R_\oplus = 6.378 \times 10^{8}$ cm, $\times 10^{6}$ m
Earth solar day	Day = 86400 s
Earth sidereal year	$P_\oplus$ = yr $= 3.155815 \times 10^{7}$ s
Astronomical Unit	AU $= 1.4960 \times 10^{13}$ cm, $\times 10^{11}$ m
Solar mass	$M_\odot = 1.98843 \times 10^{33}$ g, $\times 10^{30}$ kg
Solar radius	$R_\odot = 6.9599 \times 10^{10}$ cm, $\times 10^{8}$ m
Solar effective temperature	$T_{e\odot} = 5800$ K
Solar luminosity	$L_\odot = 3.826 \times 10^{33}$ erg/s, $\times 10^{26}$ W
Solar apparent bolometric magnitude	$m_\odot = -26.82$
Solar absolute bolometric magnitude	$M_\odot = 4.75$
Light year	ly $= 9.4605 \times 10^{17}$ cm, $\times 10^{15}$ m
Parsec	pc $= 3.0857 \times 10^{18}$ cm, $\times 10^{16}$ m $= 3.2616$ ly
Hubble constant	$H_0 = 75$ km/s/Mpc $= 23$ km/s/Mly

Color index, effective temperature, and bolometric correction for main-sequence stars

B–V	T_e	BC
-0.35	40 000	-4.50
-0.31	31 900	-3.34
-0.30	30 000	-3.17
-0.26	24 200	-2.50
-0.24	22 100	-2.23
-0.20	18 800	-1.77
-0.16	16 400	-1.39
-0.14	15 400	-1.21
-0.12	14 500	-1.04
-0.09	13 400	-0.85
-0.06	12 400	-0.66
0.00	10 800	-0.40
0.03	10 200	-0.32
0.06	9730	-0.25
0.09	9260	-0.20
0.15	8620	-0.15
0.20	8190	-0.12
0.33	7240	-0.08
0.38	6930	-0.06
0.45	6540	-0.04
0.47	6450	-0.04
0.50	6320	-0.04
0.53	6200	-0.05
0.60	5920	-0.06
0.64	5780	-0.07
0.68	5610	-0.10
0.72	5490	-0.15
0.81	5240	-0.19
0.92	4780	-0.25
0.98	4590	-0.35
1.15	4410	-0.65
1.30	4160	-0.90
1.41	3920	-1.20
1.48	3680	-1.48
1.52	3500	-1.76
1.55	3360	-2.03
1.56	3230	-2.31
1.61	3120	-2.62
1.73	3050	-3.21
1.80	2940	-3.46
1.91	2640	-4.10

The visible and infrared photometric bands of the Johnson (1966) UBV system, with the flux density S_λ (flux per unit bandwidth at wavelength λ observed for a zero-magnitude star

Band	λ [μm]	$\Delta\lambda$ [μm]	S_λ [W cm^{-2} μm^{-1}]
U	0.36	0.07	4.35×10^{-12}
B	0.43	0.10	7.20×10^{-12}
V	0.54	0.09	3.29×10^{-12}
R	0.70	0.22	1.76×10^{-12}
I_s	0.80	0.24	1.20×10^{-12}
I_J	0.90	0.24	8.30×10^{-13}
J	1.25	0.38	2.90×10^{-13}
H	1.65	0.30	1.08×10^{-13}
K	2.20	0.48	3.80×10^{-14}
L	3.50	0.70	6.90×10^{-15}
L'	3.80	0.70	5.78×10^{-15}
M	4.80	1.20	2.00×10^{-15}
N	10.1	5.70	1.09×10^{-16}
Q	20.25	6.50	7.30×10^{-18}