How big is that?

Diameter of hydrogen atom	1.06×10^{-8} cm
Diameter of the Moon	3.5×10^{3} km
Diameter of the Earth	1.3×10^{4} km
Diameter of the Sun	1.4×10^{6} km
Diameter of the Milky Way	1.7×10^{5} ly
Distance to the Moon	3.8×10^{5} km
Distance to the Sun	1.5×10^{8} km
Distance to the next nearest star	4.2 ly
Distance to the center of the Milky Way	2.8×10^{4} ly
Distance to the nearest galaxy	1.7×10^{5} ly
Mass of hydrogen atom	1.67×10^{-24} gm
Mass of the Moon	7.4×10^{25} gm
Mass of the Earth $\left(1M_{\oplus}\right)$	6.0×10^{27} gm
Mass of Jupiter $\left(1M_{J}\right)$	1.9×10^{30} gm
Mass of the Sun $\left(1M_{\odot}\right)$	2.0×10^{33} gm
Mass of the Milky Way	$4.6\times10^{11}M_{\odot}$
Luminosity of the Sun $\left(1L_{\odot}\right)$	3.8×10^{33} erg/s
Luminosity of the largest stars	$10^{5}L_{\odot}$
Luminosity of the Milky Way	$2\times10^{10}L_{\odot}$
Luminosity of quasar 3C 273	$10^{12}L_{\odot}$
Earth's rotation period (1 day)	8.64×10^{4} s
Moon's revolution period	27.322 days
Earth's revolution period (1 year)	365.25 days
Jupiter's revolution period	5.2 years
Age of the solar system	4.6×10^{9} years
Expected life span of the Sun	1.0×10^{10} years
Halflife of ^{87}Rb	4.99×10^{10} years
Age of the Universe	1.37×10^{10} years
Earth's equator rotation speed	0.47 km/s
Earth's revolution speed	30 km/s
Sun's speed within the Milky Way	250 km/s
Milky Way's speed within the local Universe	550 km/s

Typical lengths:

Atom	10^{-8} cm
Base-pair distance, between N-H groups	1.08×10^{-7} cm
Cyanobacterium diameter	$1\ \mu\text{m} = 10^{-4}$ cm
Normal star diameter	10^{6} km
Distance between stars	a few ly
Normal galaxy diameter	10^{5} ly
Distance between galaxies	10^{6} ly

Typical masses:

Smallest star	$0.08M_{\odot}$
Normal star	$1M_{\odot}$
Giant star	$10M_{\odot}$
Population III star	$700M_{\odot}$
Normal galaxy	$10^{11}-10^{12}M_{\odot}$
Galaxy cluster	$10^{14}-10^{15}M_{\odot}$

Typical luminosities:

Normal star	$1L_{\odot}$
Giant star	$10^{3}-10^{5}L_{\odot}$
Normal galaxy	$10^{9}-10^{10}L_{\odot}$
Quasar	$10^{12}-10^{13}L_{\odot}$

Typical timespans:

Planetary revolution	1 year
Galaxy rotation	$10^{7}-10^{9}$ years
Life of giant stars	$10^{6}-10^{9}$ years
Life of normal star	10^{10} years

Typical speeds:

Planetary orbits	10 km/s
Stellar motion in galaxy	100 km/s
Between nearby galaxies	100 km/s

Other important constants:

1 ly = 9.46×10^{12} km = 9.46×10^{17} cm

1 Mly = 10^{6} ly

1 km = 10^{5} cm

1 hour = 3600 s

1 year = 3.16×10^{7} s

$\pi = 3.14159265359$

1 erg = 1 gm cm^2/s^2

ln 2 = 0.693147

Speed of light: c = 2.99792458×10^{5} km/s = 2.99792458×10^{10} cm/s = 1 ly/year

Object	Orbital semimajor axis		Sidereal revolution period		Orbital eccentricity	Sidereal rotation period	Radius	Mass	Visual albedo
	(AU)	(cm)	(years)	(days)		(days)	(km)	(gm)	
Sun						25.4	695990	1.99E+33	
Mercury	0.387	5.791E+12	0.241		0.206	58.650	2436	3.30E+26	0.12
Venus	0.723	1.082E+13	0.615		0.007	-243.01	6053	4.87E+27	0.59
Earth	1.000	1.496E+13	1.000		0.017	0.997	6378	5.98E+27	0.39
Moon		*3.844E+10*		*27.322*	*0.055*	*27.322*	*1738*	*7.35E+25*	*0.11*
Mars	1.524	2.279E+13	1.881		0.093	1.026	3399	6.42E+26	0.15
Phobos		*9.380E+08*		*0.319*	*0.018*	*0.319*	*14x10*	*9.60E+18*	*0.05*
Deimos		*2.350E+09*		*1.262*	*0.002*	*1.262*	*8x6*	*2.00E+18*	*0.05*
Jupiter	5.203	7.783E+13	11.862		0.048	0.414	71370	1.90E+30	0.44
Metis		*1.280E+10*		*0.295*	*0.000*	*0.300*	*20*	*?*	*0.04*
Adrastea		*1.290E+10*		*0.298*	*0.000*	*0.290*	*12x8*	*?*	*0.05*
Amalthea		*1.815E+10*		*0.498*	*0.003*	*0.498*	*135x78*	*?*	*0.05*
Thebe		*2.220E+10*		*0.674*	*0.010*	*0.674*	*50*	*?*	*0.10*
Io		*4.216E+10*		*1.769*	*0.004*	*1.769*	*1815*	*8.89E+25*	*0.63*
Europa		*6.709E+10*		*3.551*	*0.010*	*3.551*	*1569*	*4.79E+25*	*0.64*
Ganymede		*1.070E+11*		*7.155*	*0.002*	*7.155*	*2631*	*1.48E+26*	*0.43*
Callisto		*1.880E+11*		*16.689*	*0.008*	*16.689*	*2400*	*1.08E+26*	*0.17*
Saturn	9.539	1.427E+14	29.458		0.056	0.444	60336	5.69E+29	0.46
Titan		*1.222E+11*		*15.94*	*0.029*	*15.900*	*2575*	*1.35E+26*	*0.60*
Uranus	19.191	2.871E+14	84.014		0.046	0.718	25576	8.68E+28	0.56
Neptune	30.061	4.497E+14	164.793		0.010	0.671	24300	1.02E+29	0.51
Triton		*3.548E+10*		*5.877*	*0.000*	*5.877*	*1355*	*2.14E+25*	*0.75*
Pluto	39.529	5.914E+14	248.540		0.248	6.387	1161	1.29E+25	0.50
Charon		*1.960E+09*		*6.387*	*0.000*	*6.387*	*595*	*1.77E+24*	*0.40*