

## PLANETARY CONSTANTS

(1AU=1.5x10 <sup>8</sup> km)	Symbol	Sun	Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune	Pluto
Distance from Sun (AU)	d	-	0.387	0.723	1	1.524	5.203	9.539	19.18	30.06	39.44
Distance from Sun (km)x10 <sup>6</sup>	d	-	57.9	108.2	149.6	227.9	778.3	1427	2869	4496.6	5900
Solar Constant (Watt)	I	-	8766	2572	1378	577	49	15	3.6	1.5	0.86
Radius (km) (equator)	R <sub>o</sub>	6.9x10 <sup>3</sup>	2439.7	6051.8	6378.1	3396.2	71492	60268	25559	24764	1195
Mass (kg)	M	1.99x10 <sup>30</sup>	3.30 x 10 <sup>23</sup>	4.86 x 10 <sup>24</sup>	5.97 x 10 <sup>24</sup>	6.42x 10 <sup>23</sup>	1.89 x 10 <sup>27</sup>	5.69 x 10 <sup>26</sup>	8.68 x 10 <sup>25</sup>	10.24 x 10 <sup>25</sup>	1.25 x 10 <sup>22</sup>
Mean Density (kg/m <sup>3</sup> )	ρ	1408	5427	5243	5522	3933	1326	687	1270	1638	1750
Rotation Period	τ	27d	59d	-243d	23h56m4s	24h37m23s	9h50m30s	10h14m	-11h	16h	6d9h
Revolution period	-	-	88d	224.7	365.26d	687d	11.86y	29.46y	84.01y	164.8y	247.7y
Orbital velocity (km/s)	-	-	47.9	35	29.8	24.1	13.1	9.6	6.8	5.4	4.7
Axis Inclination	-	-	<28°	3°	23°27'	23°59'	3°05'	26°44'	82°5'	28°48'	?
Inclination of orbit axis to ecliptic	-	-	7°	3.4°	0°	1.9°	1.3°	2.5°	0.8°	1.8°	17.2°
Eccentricity (flattening)	-	0.00005	0.0000	0.00	0.00335	0.00648	0.06487	0.09796	0.02293	0.01708	0.0000
Eccentricity of orbit	-	0.206	0.007	0.007	0.017	0.093	0.048	0.056	0.047	0.009	0.25
Magnetic Field at the Equator (Gauss) Average	B <sub>o</sub>	1	0.0033	-	0.31	0.3/60000:0.5nT	4.28	0.22	0.23	1.14	0.1nT
Mass (earth=1)	-	-	0.055	0.815	1	0.108	317.9	95.2	14.6	17.2	0.1(?)
Volume (earth=1)	-	-	0.06	0.88	1	0.15	1316	755	67	57	0.1(?)
Density (water=1)	-	-	5.4	5.2	5.5	4	1.3	0.7	1.2	1.7	?
Surface Pressure (bar)	P <sub>o</sub>	8.68 x 10 <sup>-4</sup>	10 x 10 <sup>-15</sup>	92	1.014	4 - 8.7 x 10 <sup>-3</sup>	0.2 - 2	>>1000	>>1000	>>1000	3 x 10 <sup>-6</sup> ?
Surface Temperature (observed) °K, °C	T <sub>o</sub>	5778	440	737	288	210	165 (1 bar level, mean) -150c	134 (1 bar level, mean) -180c	76 (1 bar level, mean) -210c	72 (1 bar level, mean) -220c	50 (1 bar level, mean) -230(?)
s:surface c:cloud top			350s,d -170s,n	480s -33c	22s	-23s					
Albedo	α	-	0.1	0.77	0.33	0.16	0.58	0.47	0.51	0.41	0.3
Escape Velocity (km/s)	V <sub>esc</sub>	618	4.25	10.8	11	5.02	59.56	35.49	21.30	23.5	1.22
Gravitational Pull (m/s <sup>2</sup> )	g	274	3.7	8.87	9.798	3.71	24.92	10.44	8.87	11.15	0.58
Main gases in atmosphere	amu	H 1.008	He, Na, O 4.003; 23; 16	CO <sub>2</sub> 44	N <sub>2</sub> , O <sub>2</sub> 28; 32 air:29	CO <sub>2</sub> , Ar 44; 18	H, He 1.008; 4.003	H, He 1.008; 4.003	H, He, CH <sub>4</sub>	H, He, CH <sub>4</sub>	CO <sub>2</sub> , N 44; 14
Moons	-	-	0	0	1	2	16	18	15	1	1

$M_C=12 \text{ amu}$

$M_{\text{air}}=29 \text{ amu}, \rho_{\text{air}}=1.29 \text{ kg/m}^3$