

TABLE A.3 The Planets

Name	Mean radius ( $R_{\oplus}$ ) <sup>a</sup>	Mass ( $M_{\oplus}$ ) <sup>b</sup>	Rotation period (days)	Orbital semimajor axis (AU)	Orbital eccentricity	Orbital period (years)
Planets						
Mercury	0.383	0.0553	58.6	0.387	0.2056	0.241
Venus	0.950	0.8150	-243.0	0.723	0.0068	0.615
Earth	1.000	1.0000	0.997	1.000	0.0167	1.000
Mars	0.532	0.1074	1.026	1.524	0.0934	1.881
Jupiter	10.97	317.8	0.414	5.203	0.0484	11.86
Saturn	9.14	95.16	0.444	9.537	0.0539	29.45
Uranus	3.98	14.50	-0.718	19.19	0.0473	84.02
Neptune	4.18	17.20	0.671	30.07	0.0086	164.8
Dwarf Planets						
Ceres	0.075	0.00016	0.378	2.767	0.0795	4.599
Pluto	0.188	0.00220	-6.387	39.45	0.2502	247.9
Haumea <sup>c</sup>	0.11	0.00070	0.163	43.13	0.1950	283.3
Makemake	0.12	~ 0.0007	unknown	45.43	0.1612	306.2
Eris	0.20	0.00280	~ 1	67.90	0.4362	559.6

a.  $R_{\oplus} = 6371$  km (Note: this table uses mean radius rather than equatorial radius.)

b.  $M_{\oplus} = 5.974 \times 10^{24}$  kg

c. Haumea is ellipsoidal due to its rapid rotation ( $0.15R_{\oplus} \times 0.12R_{\oplus} \times 0.08R_{\oplus}$ ).

TABLE A.4 Major Satellites in the Solar System<sup>a</sup>

Name	Mean radius (km)	Mass ( $10^{20}$ kg)	Orbital semimajor axis ( $10^3$ km)	Orbital period (days)
Earth				
Moon	1737	734.8	384.4	27.32
Mars				
Phobos	11.1	$1.066 \times 10^{-4}$	9.378	0.3189
Deimos	6.2	$0.148 \times 10^{-4}$	23.46	1.026
Jupiter				
Amalthea	83	0.021	181.4	0.4982
Io	1822	893.2	421.7	1.769
Europa	1561	480.0	670.9	3.551
Ganymede	2631	1482	1070	7.155
Callisto	2410	1076	1883	16.69
Himalia	85	0.07	11460	250.6
Saturn				
Janus	89	0.0190	151.5	0.6947
Mimas	198	0.3751	185.5	0.9424
Enceladus	252	1.079	237.9	1.370
Tethys	533	6.176	294.6	1.888
Dione	562	10.96	377.4	2.737
Rhea	764	23.07	527.1	4.518
Titan	2575	1346	1222	15.94
Hyperion	135	0.0559	1481	21.28
Iapetus	736	18.06	3561	79.32
Phoebe	107	0.0829	12960	-550.6
Uranus				
Puck	81	0.029	86.00	0.7618
Miranda	236	0.66	129.4	1.413
Ariel	579	12.9	191.0	2.520
Umbriel	585	12.2	266.0	4.144
Titania	789	34.2	435.9	8.706
Oberon	761	28.8	583.5	13.46
Neptune				
Galatea	88	0.037	61.95	0.4287
Larissa	97	0.049	73.55	0.5547
Proteus	210	0.50	117.6	1.122
Triton	1353	213.9	354.8	-5.877
Nereid	170	0.31	5514	360.1
Pluto				
Charon	604	15	17.54	-6.387

a. Includes all natural satellites of terrestrial planets, plus all satellites of Jovian and dwarf planets with mean radius > 80 km.