

SOLAR SYSTEM FACT SHEET (Revised 2018 NOV 11)

DATA PROVIDED BY:

NASA Solar System Ambassador program
 NASA Ames Research Center
 NASA Goddard Space Flight Center
 NASA Jet Propulsion Laboratory
 Hubble Space Telescope Science Institute
 Brian Marsden & Gareth Williams, International Astronomical Union
 Royal Astronomical Society of Canada
 Hansen Planetarium Education Department
 University of Hawaii

		MERCURY	VENUS	EARTH	MOON	MARS	JUPITER	SATURN	URANUS	NEPTUNE	SUN
Average Distance From Sun	Kilometers (in millions)	57.91	108.21	149.60	.3844	227.94	778.30	1,429.39	2,875.04	4,504.55	39.95 trillion
	Light Travel Time	3m13s	6m1s	8m19s	1.3s	12m40s	43m16s	1h19m28s	2h39m50s	4h10m25s	4.22y
	Astronomical Units	0.3871	0.7233	1.0000	0.0026	1.5237	5.203	9.555	19.218	30.110	267,032
					from Earth						to nearest star
Length Of Year	Period Of Orbit	87.969d	224.701d	365.256d	27.32d	1.8808y	11.862y	29.457y	84.020y	164.770y	226 million y
					to orbit Earth						to orbit galaxy
Length of Stellar Day	Period of Rotation	58d15h31m	243d0h26mR	23h56m04s	27d07h43m	24h37m23s	9h55m30s	10h39m22s	17h14m24sR	16h6m36s	
Avg. Length Solar Day	Period of Rotation	175d22h30m	116d18h01m	24h00m00s	29d12h44m	24h39m35s	9h55m33s	10h39m24s	17h14m00s	16h07m00s	25d equator 35d poles
Average Orbital Velocity	Kilometers per second	47.87	35.02	29.79	1.023	24.13	13.06	9.66	6.81	5.44	217.35 around galaxy center
	Kilometers per hour	172,339	126,074	107,225	3,683	86,865	47,029	34,781	24,527	19,595	782,460 around galaxy center
Equatorial Diameter	Kilometers	4,879.4	12,103.6	12,756.28	3,474.8	6,792	142,984**	120,536**	51,118**	49,528**	1,392,000
	Sun = 1	0.0035	0.0087	0.0092	0.0025	0.0049	0.1027**	0.0866**	0.0367**	0.0356**	1.0
	Earth = 1	0.383	0.949	1.0	0.2724	0.532	11.209**	9.449**	4.007**	3.883**	109
Mass	Earth = 1	0.0553	0.8150	1.0	0.0123	0.1074	317.83	95.159	14.500	17.204	332,946
Volume	Earth = 1	0.0562	0.857	1.0	0.0203	0.151	1,321.35	763.59	63.09	57.72	1,300,000
Mean	Grams / cc	5.43	5.24	5.515	3.34	3.94	1.33	0.70	1.30	1.76	1.41

Density	Water = 1										
Surface Gravity	Earth = 1	0.378	0.905	1.0	0.166	0.379	2.53	1.07	0.903	1.14	27.96
Escape Velocity	Kilometers per second	4.25	10.36	11.18	2.38	5.02	59.5	35.5	21.3	23.5	617.5
	Kilometers per hour	15,300	37,303	40,249	8,553	18,081	214,300	127,700	76,600	84,700	2,223,000
Temperature Extreme	High C	425	462	58	127	17	20,000*	12,000*	6,000*	6,000*	15,000,000*
	High K	698	735	331	400	290	20,000*	12,000*	6,000*	6,000*	15,000,000*
	Low C	-173	462	-88	-173	-143	438**	407**	346**	347**	4,000**
	Low K	100	735	185	100	130	711**	680**	619**	620**	4,000**
Atmosphere	Principal Gases	O2 Na H2 He	CO2 N2	N2 O2	None Known	CO2 N2 Ar	H2 He	H2 He	H2 He CH4	H2 He CH4	H2 He
	Eccentricity of Orbit	Circular Orbit = 0	0.2056	0.0068	0.0167	0.0549	0.0934	0.0485	0.0555	0.0464	0.0095
Inclination of Equator	To Planet's Orbit Plane (degrees)	0.01	177.36	23.44	6.68	25.19	3.13	26.73	97.77	28.32	7.25 Sun equator to ecliptic
	To Ecliptic	7.0	3.4	0.0	5.1 To Earth's Orbit Plane	1.8	1.3	2.5	0.8	1.8	
Albedo		0.11	0.65	0.37	0.12	0.15	0.52	0.47	0.40	0.35	
Oblateness of Planet	Spherical Planet = 0	0.0	0.0	0.003354	0.0	0.005889	0.06487	0.0980	0.02293	0.01708	0
Natural Satellites (More satellite data below)		0	0	1	0	2	79 plus rings	62 plus rings	27 plus rings	14 plus rings	8 planets

Pole Stars

Mercury: In Draco, nearest bright star is omicron Draconis

Venus: In Draco, close to the ecliptic pole, nearest bright star is delta Draconis (brightest star in the head of Draco)

Earth: Polaris

Mars: In Cygnus, nearest bright star is Deneb several degrees away

Jupiter: In Draco, close to the ecliptic pole, nearest bright star is zeta Draconis

Saturn: In Cepheus, nearest bright star is Polaris

Uranus: In Ophiuchus, close to eta Oph, the left-side (our left) bright star at the base of Ophiuchus where Serpens Cauda peels off

Neptune: In Cygnus, about midway between gamma and delta, the center and left stars of the cross-piece

Natural satellite data

Name	Size	Distance From planet
Earth (1):		
Moon	3,476	384,400
Mars (2):		
Phobos	22	9,377
Deimos	13	23,460
Jupiter (79):		
Metis (XVI, S/1979 J3)	60	127,700
Adrastea (XV, S/1979 J1)	20	128,700
Amalthea (V)	250	181,200
Thebe (XIV, S/1979 J2)	116	221,700
Io (I)	3,660	421,700
Europa (II)	3,122	671,000
Ganymede (III)	5,262	1,070,400
Callisto (IV)	4,821	1,882,700
Themisto (XVIII, S/1975 J1)	8	7,393,200
Leda (XIII)	16	11,187,800
Himalia (VI)	170	11,452,000
S/2018 J 1	2	11,453,000
S/2017 J 4	2	11,495,000
Lysithea (X)	36	11,740,600
Elara (VII)	86	11,778,000
Dia (LIII)	4	12,570,000
Carpis (LVI, S/2003 J20)	3	17,144,900
S/2003 J 12	1	17,739,500
Valetudo (LXII)	1	18,928,000
Euporie (XXXIV), S/2001 J7)	2	19,088,400
S/2003 J 3	2	19,621,800
S/2003 J 18	2	19,812,600
S/2010 J 2	1	20,307,200
Thelxinoe (LII, S/2003 J22)	2	20,453,800
Euanthe (XXXIII, S/2001 J7)	3	20,464,900
Helike (XLV, S/2003 J6)	4	20,540,300
Orthosie (XXXV, S/2001 J9)	2	20,568,000
S/2017 J 7	2	20,571,000
S/2016 J 1	2	20,595,483
S/2017 J 3	2	20,639,000
Iocaste (XXIV, S/2000 J3)	5	20,722,600
S/2003 J 16	2	20,743,800
Praxidike (XXVII, S/2000 J7)	7	20,824,000
Harpalyke (XXII, S/2000 J5)	4	21,063,800
Mneme (XL, S/2003 J 21)	2	21,129,800
Hermippe (XXX, S/2001 J 3)	4	21,182,100
Thyone (XXIX, S/2001 J2)	4	21,405,600

S/2017 J 9	2	21,430,000
Ananke (XII)	28	21,455,000
Herse (L, S/2003 J 17)	2	22,134,300
Aitne (XXXI, S/2001 J 11)	3	22.285,200
S/2017 J 6	2	22,395,000
S/2011 J 1	1	22,402,000
Kale (XXXVII, S/2001 J 8)	2	22,409,200
Taygete (XX, S/2000 J 9)	5	22,438,700
S/2003 J 19	2	22,709,000
Chaldene (XXI, S/2000 J 10)	4	22,713,400
S/2003 J 15	2	22,721,000
S/2003 J 10	2	22,730,800
S/2003 J 23	2	22,739,700
Erinome (XXV, S/2000 J 4)	3	22,986,300
Aoede (XLI, S/2003 J 7)	4	23,044,200
Kallichore (XLIV, S/2003 J 11)	2	23,111,800
S/2017 J 5	2	23,169,000
S/2017 J 8	1	23,174,000
Kalyke (XXIII, S/2000 J 2)	5	23,180,800
Carme (XI)	46	23,198,000
Callirrhoe (XVII, S/1999 J 1)	9	23,215,000
Eurydome (XXXII, S/2001 J 4)	3	23,230,900
S/2017 J 2	2	23,314,300
Pasithee (XXXVIII, S/2001 J 6)	2	23,307,300
S/2010 J 1	1	23,314,300
Kore (S/2003 J 14)	2	23,345,100
Cyllene (XLVIII, S/2003 J 13)	2	23,396,300
S/2011 J 2	1	23,401,000
Eukelade (XLVII, S/2003 J 1)	4	23,483,700
S/2017 J 1	2	23,484,000
S/2003 J 4	2	23,570,800
Pasiphae (VIII)	60	23,609,000
Hegemone (XXXIX, S/2003 J 8)	3	23,702,500
Arche (XLIII, S/2002 J 1)	3	23,717,100
Isonoe (XXVI, S/2000 J 6)	4	23,800,600
S/2003 J 9	1	23,857,800
S/2003 J 5	4	23,974,000
Sinope (IX)	38	24,057,900
Sponde (XXXVI, S/2001 J 5)	2	24,252,600
Autonoe (XXVIII, S/2001 J 1)	4	24,264,400
Megaclite (XIX, S/2000 J 8)	5	24,687,200
S/2003 J 2	2	30,290,800

Saturn (62):

S/2009 S1	~.3	117,000
Pan (XVIII, S/1981 S 13)	30	133,600
Daphnis (XXXV S/2005 S 1)	7	136,500
Atlas (XV, S/1980 S 28)	31	137,700
Prometheus (XVI, S/1980 S 27)	86	139,400

Pandora (XVII, S/1980 S 26)	81	141,700
Epimetheus (XI, S/1980 S 3)	113	151,400
Janus (X, S/1980 S 1)	179	151,500
Aegaeon (S/2008S1)	~.5	167,500
Mimas (I)	397	185,400
Methone (XXXII, S/2004 S 1)	3	194,400
Anthe (S/2007 S4)	~2	197,700
Pallene (XXXIII)	4	212,300
Enceladus (II)	504	238,000
Telesto (XIII, S/1980 S 13)	24	294,600
Tethys (III)	1,066	294,600
Calypso (XIV, S/1980 S 25)	21	294,600
Dione (IV)	1,123	377,400
Helene (XII, S/1980 S 6)	33	377,400
Polydeuces (XXXIV, S/2004 S 5)	3	377,400
Rhea (V)	1,529	527,100
Titan (VI)	5,151	1,222,000
Hyperion (VII)	266	1,481,000
Iapetus (VIII)	1,472	3,560,800
Kiviuq (XXIV, S/2000 S 5)	~16	11,294,800
Ijiraq (XXII, S/2000 S 6)	~12	11,355,300
Phoebe (IX)	214	12,869,700
Paaliaq (XX, S/2000 S 2)	~22	15,103,400
Skathi (XXVII, S/2000 S 8)	~8	15,672,500
Albiorix (XXVI, S/2000 S 11)	~32	16,266,700
S/2007 S2	~6	16,560,000
Bebhionn (S/2004 S 11)	~6	17,153,500
Erriapo (XXVIII, S/2000 S 10)	~10	17,236,900
Skoll (S/2006 S 8)	~6	17,473,800
Siarnaq (XXIX, S/2000 S 3)	~40	17,776,600
Tarqeq (LII, S/2007 S1)	~7	17,910,600
S/2004 S 13	~6	18,056,300
Greip (LI, S/2006 S4)	~6	18,065,700
Hyrokkin (S/2004 S 19)	~8	18,168,300
Jarnsaxa (L, S/2006 S6)	~6	18,556,900
Tarvos (XXI, S/2000 S 4)	~15	18,562,800
Mundilfari (XXV, S/2000 S 9)	~7	18,725,800
S/2006 S 1	~6	18,930,200
S/2004 S 17	~4	19,099,200
Bergelmir (S/2004 S 15)	~6	19,104,000
Narvi (XXXI, S/2003 S 1)	~7	19,395,200
Suttungr (XXIII, S/2000 S 12)	~7	19,579,000
Hati (S/2004 S 14)	~6	19,709,300
S/2004 S 12	~5	19,905,900
Farbauti (S/2004 S 9)	~5	19,984,800
Thrymr (XXX, S/2000 S 7)	~7	20,278,100
Aegir (S/2004 S 10)	~6	20,482,900
S/2007 3	~5	20,518,500
Bestla (S/2004 S 18)	~7	20,570,000

S/2004 S 7	~6	20,576,700
S/2006 S 3	~6	21,076,300
Fenrir (S/2004 S 16)	~4	21,930,600
Surtur (S/2006 S 7)	~6	22,288,900
Kari (S/2006 S 2)	~7	22,321,200
Ymir (XIX, S/2000 S 1)	~18	22,429,700
Loge (S/2006 S 5)	~6	22,984,300
Fornjot (S/2004 S 8)	~6	22,504,900

Uranus (27):

Cordelia (VI, S/1986 U7)	40	49,800
Ophelia (VII, S/1986 U8)	42	53,800
Bianca (VIII, S/1986 U9)	51	59,200
Cressida (IX, S/1986 U3)	80	61,800
Desdemona (X, S/1986 U6)	64	62,700
Juliet (XI, S/1986 U2)	93	64,400
Portia (XII, S/1986 U1)	135	66,100
Rosalind (XIII, S/1986 U4)	72	69,900
Cupid (XXVII, S/2003 U2)	~18	74,800
Belinda (XIV, S/1986 U5)	90	75,300
Perdita (XXV, S/1986 U10)	30	76,400
Puck (XV, S/1985 U1)	162	86,000
Mab (XXVI, S/2003 U1)	~25	97,700
Miranda (V)	471	129,400
Ariel (I)	1,158	191,000
Umbriel (II)	1,169	266,300
Titania (III)	1,578	435,900
Oberon (IV)	1,522	583,500
Francisco (XXII, S/2001 U3)	~22	4,276,000
Caliban (XVI, S/1997 U1)	~72	7,231,000
Stephano (XX, S/1999 U2)	~32	8,004,000
Trinculo (XXI, S/2001 U1)	~18	8,504,000
Sycorax (XVII, S/1997 U2)	~150	12,179,000
Margaret (XXIII, S/2003 U3)	~20	14,345,000
Prospero (XVIII, S/1999 U3)	~50	16,256,000
Setebos (XIX, S/1999 U1)	~48	17,418,000
Ferdinand (XXIV, S/2001 U2)	~20	20,901,000

Neptune (14):

Naiad (III, 1989 N6)	67	48,200
Thalassa (IV, S/1989 N5)	83	50,100
Despina (V, S/1989 N3)	152	52,500
Galatea (VI, S/1989 N4)	175	62,000
Larissa (VII, S/1989 N2)	195	73,500
S/2004 N1	~18	105,300
Proteus (VIII, S/1989 N1)	418	117,600
Triton (I)	2,707	354,800
Nereid (II)	340	5,513,800
Halimede (S/2002 N1)	62	16,611,000

Sao (S/2002 N2)	44	22,228,000
Laomedeia (S/2002 N3)	42	23,567,000
Psamathe (X, S/2003 N1)	38	48,096,000
Neso (S/2002 N4)	60	49,285,000

LEGEND y = years, d = days, h = hours, m = minutes, s = seconds

R = Retrograde days

* = Core

** = At 1 atmosphere (altitude where barometric pressure equals Earth's sea level pressure)