# SATELLITES OF THE PLANETS

This table gives characteristics of the known satellites of the planets. The parameters covered are:

- Orbital period in units of earth days. An R following the value indicates a retrograde motion.
- Distance from the planet, as measured by the semi-major axis of the orbit.
- Eccentricity of the orbit.
- Inclination of the satellite orbit with respect to the equator of the planet.
- Mass of the satellite relative to the planet.
- Radius of the satellite in km.
- Mean density of the satellite.
- Geometric albedo, which is a measure of the fraction of incident sunlight reflected by the satellite.

## References


1. Seidelmann, P. K., Ed., *Explanatory Supplement to the Astronomical Almanac*, University Science Books, Mill Valley, CA, 1992.
2. Lang, K. R., *Astrophysical Data: Planets and Stars*, Springer-Verlag, New York, 1992.
3. Burns, J. A., and Matthews, M. S., Eds., *Satellites*, University of Arizona Press, Tucson, 1986.


| Planet | | Satellite | Orb. Period d | Distance $10^3$ km | Eccentricity | Inclination | Rel. mass | Radius km | Den. g/cm$^3$ | Albedo |
|---|---|---|---|---|---|---|---|---|---|---|
| Earth | | Moon | 27.321661 | 384.400 | 0.054900489 | 18.28–28.58° | 0.01230002 | 1738 | 3.34 | 0.12 |
| Mars | I | Phobos | 0.31891023 | 9.378 | 0.015 | 1.0° | $1.5 \times 10^{-8}$ | $13.5 \times 10.8 \times 9.4$ | <2 | 0.06 |
| | II | Deimos | 1.2624407 | 23.459 | 0.0005 | 0.9–2.7° | $3 \times 10^{-9}$ | $7.5 \times 6.1 \times 5.5$ | <2 | 0.07 |
| Jupiter | I | Io | 1.769137786 | 422 | 0.004 | 0.04° | $4.68 \times 10^{-5}$ | 1815 | 3.55 | 0.61 |
| | II | Europa | 3.551181041 | 671 | 0.009 | 0.47° | $2.52 \times 10^{-5}$ | 1569 | 3.04 | 0.64 |
| | III | Ganymede | 7.15455296 | 1070 | 0.002 | 0.21° | $7.80 \times 10^{-5}$ | 2631 | 1.93 | 0.42 |
| | IV | Callisto | 16.6890184 | 1883 | 0.007 | 0.51° | $5.66 \times 10^{-5}$ | 2400 | 1.83 | 0.20 |
| | V | Amalthea | 0.49817905 | 181 | 0.003 | 0.40° | $3.8 \times 10^{-9}$ | $135 \times 83 \times 75$ | | 0.05 |
| | VI | Himalia | 250.5662 | 11480 | 0.15798 | 27.63° | $5.0 \times 10^{-9}$ | 93 | | 0.03 |
| | VII | Elara | 259.6528 | 11737 | 0.20719 | 24.77° | $4 \times 10^{-10}$ | 38 | | 0.03 |
| | VIII | Pasiphae | 735 R | 23500 | 0.378 | 145° | $1 \times 10^{-10}$ | 25 | | |
| | IX | Sinope | 758 R | 23700 | 0.275 | 153° | $0.4 \times 10^{-10}$ | 18 | | |
| | X | Lysithea | 259.22 | 11720 | 0.107 | 29.02° | $0.4 \times 10^{-10}$ | 18 | | |
| | XI | Carme | 692 R | 22600 | 0.20678 | 164° | $0.5 \times 10^{-10}$ | 20 | | |
| | XII | Ananke | 631 R | 21200 | 0.16870 | 147° | $0.2 \times 10^{-10}$ | 15 | | |
| | XIII | Leda | 238.72 | 11094 | 0.14762 | 26.07° | $0.03 \times 10^{-10}$ | 8 | | |
| | XIV | Thebe | 0.6745 | 222 | 0.015 | 0.8° | $4 \times 10^{-10}$ | $55 \times 45$ | | 0.05 |
| | XV | Adrastea | 0.29826 | 129 | | | $0.1 \times 10^{-10}$ | $12.5 \times 10 \times 7.5$ | | 0.05 |
| | XVI | Metis | 0.294780 | 128 | | | $0.5 \times 10^{-10}$ | 20 | | 0.05 |
| Saturn | I | Mimas | 0.942421813 | 185.52 | 0.0202 | 1.53° | $8.0 \times 10^{-8}$ | 196 | 1.44 | 0.5 |
| | II | Enceladus | 1.370217855 | 238.02 | 0.00452 | 1.86° | $1.3 \times 10^{-7}$ | 250 | 1.13 | 1.0 |
| | III | Tethys | 1.887802160 | 294.66 | 0.00000 | 1.86° | $1.3 \times 10^{-6}$ | 530 | 1.20 | 0.9 |
| | IV | Dione | 2.736914742 | 377.40 | 0.002230 | 0.02° | $1.85 \times 10^{-6}$ | 560 | 1.41 | 0.7 |
| | V | Rhea | 4.517500436 | 527.04 | 0.00100 | 0.35° | $4.4 \times 10^{-6}$ | 765 | 1.33 | 0.7 |
| | VI | Titan | 15.94542068 | 1221.83 | 0.029192 | 0.33° | $2.38 \times 10^{-4}$ | 2575 | 1.88 | 0.21 |
| | VII | Hyperion | 21.2766088 | 1481.1 | 0.104 | 0.43° | $3 \times 10^{-8}$ | $205 \times 130 \times 110$ | | 0.3 |
| | VIII | Iapetus | 79.3301825 | 3561.3 | 0.02828 | 14.72° | $3.3 \times 10^{-6}$ | 730 | 1.15 | 0.2 |
| | IX | Phoebe | 550.48 R | 12952 | 0.16326 | 177° | $7 \times 10^{-10}$ | 110 | | 0.06 |
| | X | Janus | 0.6945 | 151.472 | 0.007 | 0.14° | | $110 \times 100 \times 80$ | | 0.8 |
| | XI | Epimetheus | 0.6942 | 151.422 | 0.009 | 0.34° | | $70 \times 60 \times 50$ | | 0.8 |
| | XII | Helene | 2.7369 | 377.40 | 0.005 | 0.0° | | $18 \times 16 \times 15$ | | 0.7 |
| | XIII | Telesto | 1.8878 | 294.66 | | | | $17 \times 14 \times 13$ | | 0.5 |
| | XIV | Calypso | 1.8878 | 294.66 | | | | $17 \times 11 \times 11$ | | 0.6 |
| | XV | Atlas | 0.6019 | 137.670 | 0.000 | 0.3° | | $20 \times 10$ | | 0.9 |
| | XVI | Prometheus | 0.6130 | 139.353 | 0.003 | 0.0° | | $70 \times 50 \times 40$ | | 0.6 |
| | XVII | Pandora | 0.6285 | 141.700 | 0.004 | 0.0° | | $55 \times 45 \times 35$ | | 0.9 |
| | XVIII | Pan | 0.5750 | 133.583 | | | | 10 | | 0.5 |
| Uranus | I | Ariel | 2.52037935 | 191.02 | 0.0034 | 0.3° | $1.56 \times 10^{-5}$ | 579 | 1.55 | 0.34 |
| | II | Umbriel | 4.1441772 | 266.30 | 0.0050 | 0.36° | $1.35 \times 10^{-5}$ | 586 | 1.58 | 0.18 |
| | III | Titania | 8.7058717 | 435.91 | 0.0022 | 0.14° | $4.06 \times 10^{-5}$ | 790 | 1.69 | 0.27 |
| | IV | Oberon | 13.4632389 | 583.52 | 0.0008 | 0.10° | $3.47 \times 10^{-5}$ | 762 | 1.64 | 0.24 |

| Planet | Satellite | | Orb. Period d | Distance $10^3$ km | Eccentricity | Inclination | Rel. mass | Radius km | Den. g/cm³ | Albedo |
|---|---|---|---|---|---|---|---|---|---|---|
| | V | Miranda | 1.41347925 | 129.39 | 0.0027 | 4.2° | $0.08 \times 10^{-5}$ | 240 | 1.25 | 0.27 |
| | VI | Cordelia | 0.335033 | 49.77 | <0.001 | 0.1° | | 13 | | 0.07 |
| | VII | Ophelia | 0.376409 | 53.79 | 0.010 | 0.1° | | 15 | | 0.07 |
| | VIII | Bianca | 0.434577 | 59.17 | <0.001 | 0.2° | | 21 | | 0.07 |
| | IX | Cressida | 0.463570 | 61.78 | <0.001 | 0.0° | | 31 | | 0.07 |
| | X | Desdemona | 0.473651 | 62.68 | <0.001 | 0.2° | | 27 | | 0.07 |
| | XI | Juliet | 0.493066 | 64.35 | <0.001 | 0.1° | | 42 | | 0.07 |
| | XII | Portia | 0.513196 | 66.09 | <0.001 | 0.1° | | 54 | | 0.07 |
| | XIII | Rosalind | 0.558459 | 69.94 | <0.001 | 0.3° | | 27 | | 0.07 |
| | XIV | Belinda | 0.623525 | 75.26 | <0.001 | 0.0° | | 33 | | 0.07 |
| | XV | Puck | 0.761832 | 86.01 | <0.001 | 0.31° | | 77 | | 0.07 |
| Neptune | I | Triton | 5.8768541 R | 354.76 | 0.000016 | 157.345° | $2.09 \times 10^{-4}$ | 1353 | 2.05 | 0.7 |
| | II | Nereid | 360.13619 | 5513.4 | 0.7512 | 27.6° | $2 \times 10^{-7}$ | 170 | | 0.4 |
| | III | Naiad | 0.294396 | 117.6 | <0.001 | 4.74° | | 29 | | 0.06 |
| | IV | Thalassa | 0.311485 | 73.6 | <0.001 | 0.21° | | 40 | | 0.06 |
| | V | Despina | 0.334655 | 52.6 | <0.001 | 0.07° | | 74 | | 0.06 |
| | VI | Galatea | 0.428745 | 62.0 | <0.001 | 0.05° | | 79 | | 0.06 |
| | VII | Larissa | 0.554654 | 50.0 | <0.0014 | 0.20° | | 104 × 89 | | 0.06 |
| | VIII | Proteus | 1.122315 | 48.2 | <0.001 | 0.55° | | 218 × 208 × 201 | | 0.06 |
| Pluto | I | Charon | 6.38725 | 19.6 | <0.001 | 99° | 0.22 | 593 | | 0.5 |