

Earth Fact Sheet



Bulk parameters

Mass (10^{24} kg)	5.9722
Volume (10^{10} km ³)	108.321
Equatorial radius (km)	6378.137
Polar radius (km)	6356.752
Volumetric mean radius (km)	6371.000
Core radius (km)	3485
Ellipticity (Flattening)	0.003353
Mean density (kg/m ³)	5513
Surface gravity (mean) (m/s ²)	9.820
Surface acceleration (eq) (m/s ²)	9.780
Surface acceleration (pole) (m/s ²)	9.832
Escape velocity (km/s)	11.186
GM ($\times 10^6$ km ³ /s ²)	0.39860
Bond albedo	0.294
Geometric albedo	0.434
V-band magnitude V(1,0)	-3.99
Solar irradiance (W/m ²)	1361.0
Black-body temperature (K)	254.0
Topographic range (km)	20.4
Moment of inertia (I/MR ²)	0.3308
J ₂ ($\times 10^{-6}$)	1082.63
Number of natural satellites	1
Planetary ring system	No

Orbital parameters

Semimajor axis (10^6 km)	149.598
Sidereal orbit period (days)	365.256
Tropical orbit period (days)	365.242
Perihelion (10^6 km)	147.095
Aphelion (10^6 km)	152.100
Mean orbital velocity (km/s)	29.78
Max. orbital velocity (km/s)	30.29
Min. orbital velocity (km/s)	29.29
Orbit inclination (deg)	0.000
Orbit eccentricity	0.0167
Sidereal rotation period (hrs)	23.9345
Length of day (hrs)	24.0000
Obliquity to orbit (deg)	23.44
Inclination of equator (deg)	23.44

Earth Mean Orbital Elements (J2000)

Semimajor axis (AU)	1.00000011
Orbital eccentricity	0.01671022
Orbital inclination (deg)	0.00005
Longitude of ascending node (deg)	-11.26064
Longitude of perihelion (deg)	102.94719
Mean Longitude (deg)	100.46435

North Pole of Rotation

Right Ascension: 0.00 - 0.641T
Declination : 90.00 - 0.557T
Reference Date : 12:00 UT 1 Jan 2000 (JD 2451545.0)
T = Julian centuries from reference date

Terrestrial Magnetosphere

Model GSFC-1283

Dipole field strength: 0.306 Gauss-Re³
Dipole offset: 0.076 Re
Surface (1 Re) field strength: 0.24 - 0.66 Gauss

Geomagnetic Poles - Model WMM2020

Geocentric Dipole: 80.65 N, 72.68 W
Magnetic North Pole: 86.50 N, 164.04 E

Re denotes Earth model radius, here defined to be 6,378 km





Terrestrial Atmosphere



Surface pressure: 1014 mb
Surface density: 1.217 kg/m³
Scale height: 8.5 km
Total mass of atmosphere: 5.1 x 10¹⁸ kg
Total mass of hydrosphere: 1.4 x 10²¹ kg
Average temperature: 288 K (15 C)
Diurnal temperature range: 283 K to 293 K (10 to 20 C)
Wind speeds: 0 to 100 m/s
Mean molecular weight: 28.97
Atmospheric composition (by volume, dry air):
Major : 78.08% Nitrogen (N₂), 20.95% Oxygen (O₂),
Minor (ppm): Argon (Ar) - 9340; Carbon Dioxide (CO₂) - 420
Neon (Ne) - 18.18; Helium (He) - 5.24; CH₄ - 1.94
Krypton (Kr) - 1.14; Hydrogen (H₂) - 0.55
Numbers do not add up to exactly 100% due to roundoff and uncertainty
Water is highly variable, typically makes up about 1%


Note that the acceleration values given are for the equator and pole.
The standard acceleration of gravity for Earth is defined (CODATA 2018) as 9.80665 m/s² (exact).

The Moon

For information on the Moon, see the [Moon Fact Sheet](#)

-  [Notes on the factsheets](#) - definitions of parameters, units, notes on sub- and superscripts, etc.
-  [Planetary Fact Table](#) - metric units
-  [Planetary Fact Table](#) - U.S. units
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