

Light year

Although the astronomical unit is fine for our Solar System, it is not sufficient to designate the greater distances to other stars and galaxies. Instead, the light year is used as a unit of measurement.

A light year is the distance light travels in one year and can be calculated as the speed of light in kilometers/second or miles/second multiplied times the number of seconds in a year.

The speed of light is approximately 300,000 kilometers per second or 186,000 miles per second. One year equals 365 days \times 24 hours in a day \times 60 minutes in an hour \times 60 seconds in a minute, which equals 31,536,000 seconds. Thus, a light year is about:

- 9,500,000,000,000 km or 9.5×10^{12} km
- 5,900,000,000,000 mi or 5.9×10^{12} mi

A light year is also equals 63,241 AU.

Common large distances

Common large distances in space, measured in light years, include:

- Proxima Centauri, the nearest star in our Milky Way galaxy, is 4.22 light years away.
- The Milky Way galaxy is about 100,000 light years across.
- The Andromeda Galaxy is approximately 2,500,000 light years away.
- The size of the Universe is estimated to be between 93 billion and 156 billion light years across.

The time it takes light to travel from the Sun to the Earth (1 AU) is approximately 499 seconds or 8.32 minutes. You could say that 1 AU equals 8.33 light minutes.