

Astronomy Facts

Astronomical Distances:

If your car was a spaceship going 100 km an hour 24 hours a day, it would take you:

- ★ Less than an hour to get outside our atmosphere (to "outer space")
- ★ Almost six months to get to the moon
- ★ 180 years to get to the Sun
- ★ 757 years to get to Jupiter
- ★ 1,535 years to get to Saturn
- ★ 50 million years to get to the nearest star!

A Scale Model of the Solar System:

If the Sun were the size of a bowling ball (200mm diameter):

- ★ Mercury would be a "pinhead" approx. 8 metres away)
- ★ Venus, the size of a "peppercorn," 16 metres away
- ★ Earth another "peppercorn," 22 metres away
- ★ Mars, a peppercorn 33 metres away
- ★ Jupiter, a "chestnut" 112 metres away
- ★ Saturn, an "acorn" 206 metres away
- ★ Uranus, a "peanut" 413 metres away
- ★ Neptune, another peanut, 650 metres away
- ★ Pluto, a pinhead, would be 850 metres
- ★ The nearest bowling ball sized star would be over 6100 km (Note: at this scale, 1360 km = 1 light year).

A Scale Model of the Galaxy:

To get an idea of the size of our galaxy, we can shrink the scale model down even further:

- ★ If the Earth-Sun distance was 1 mm
- ★ Our solar system would be 80 mm in diameter
- ★ One light year would be 63 m
- ★ The nearest star would be 270 m away
- ★ The entire Milky Way (our galaxy), on this scale, would be twice the size of Australia!

Astronomical Facts:

One light year is approx 9.5x1 012 kilometres

The speed of light is 300000 km/sec, or (approx) 1 billion km/hour

The sun is 1.4 million km across (110 times the earth), and over 150 million km away (500 light seconds)

The largest stars (eg: Betelgeuse, Antares) are over 400 million km across (more than 300 times the diameter of the Sun)

The brightest stars are over 10,000 times brighter than the sun.

The distance to our nearest large galaxy, Andromeda (2.9 million light years), is about 29- times the Milky Way's diameter (100 thousand light years). If your fist were the Milky Way, hold it high over your head - Andromeda would be another fist-sized galaxy at your feet!!

How can we picture a billion?

Let's use another scale model, and use a grain of sand (112 mm across) as a unit:)

- ★ Two thousand grains of sand lined up would be about a metre long
- ★ A square-metre, one grain of sand thick, would contain about four million grains of sand
- ★ A cubic metre would be about 8 billion grains of sand!
- ★ It is estimated there are 100-300 billion stars in our Milky Way galaxy (and perhaps 50 billion galaxies are within the grasp of the Hubble Space Telescope (more stars than there are grains of sand on all the beaches on earth!))