

Our life-giving sun

The sun is the star at the centre of the solar system. It has a diameter of about 1,392,000 kilometres - over 100 times the diameter of the Earth (?). Although the colour of the sun is white, it often looks yellow, because of the scattering of blue light in the earth's atmosphere.

The sun used to be regarded by astronomers as a relatively small star, but it is now thought to be brighter than about 85 per cent of the stars in the Milky Way galaxy. The most immediately visible features of the sun are its sunspots, which are surface areas that appear darker than their surroundings because of lower temperatures. The largest sunspots can be tens of thousands of kilometres across.

Humans throughout history have recognised the sun's role in supporting life on Earth by giving it prominent roles in their religions and mythology. It is the source of the word Sunday. The Latin name sol for the Sun God gives us the adjective solar - for example, solar panels for converting the sun's energy into electricity.

The sun is gradually becoming brighter by about 10% every 1,000,000,000 years and its surface temperature is slowly rising. While it's clear that life could not exist without the sun as it is now, the increase in solar temperatures means that in about another billion years the surface of the Earth will become too hot for liquid water to exist and without water there will be no life.

The sun is about halfway through its evolution. Every second more than 4,000,000 metric tons of matter is converted into energy within the sun's core when the sun runs out of hydrogen fuel in about 5,000,000,000 years it will enter a red giant phase. As a red giant the sun will have a maximum radius beyond the Earth's orbit and the Earth will be incinerated and it will cease to be.

Fortunately, all of this will happen in a very long time from now, so in the meantime we can all continue to enjoy the power and energy of our life-giving sun.

<http://www.esradioandtv.com/tv/5/program.html>

<https://www.youtube.com/watch?v=zhAEu2E5FyQ&t=11s>

1. The Sun has a diameter of about 1,392,000 km. What does diameter mean?

How far it will travel in a day.

How wide it is from one side to the other.

How much bigger it is than the Earth.

How far away it is from the Earth.

2. Why does the Sun often look yellow?

Because it is very large compared to the Earth.

Because it is travelling so fast.

Because it is seen through blue light.

Because white light cannot be seen clearly.

5. Sunspots appear darker because ...

they are holes in the Sun.

they are not as hot.

they are further away.

they are the source of solar winds.