



Eclipses

As the Earth and Moon orbit one another, the shadow of one can fall on the other.

If the Moon lines up with the Sun, it can completely cover it up. For a short time, an area of the Earth becomes as dark as night. This is a Solar Eclipse. We then see the Sun's glowing disc being blocked off by the dark New Moon. As the Sun is hidden, everything suddenly goes dark.

Astronomers take advantage of such occasions to study the Sun's atmosphere. Normally the atmosphere is hidden by the dazzling light from the Sun's surface. During an eclipse, the Sun is covered and only the prominences and atmosphere around the edge can be seen.

When an eclipse of the Sun is total, the solar corona can be seen as a white halo around the black disk of the Moon. This picture appears blue because of the filters used on the telescope taking the picture. (Picture right)



More common than total eclipses are partial eclipses.

This is when the Moon just covers a bit of the Sun as it passes.

A Lunar Eclipse is when the Moon goes behind the Earth so that it is hidden from the Sun's light. Solar and Lunar eclipses happen on average three or four times a year.

- ~ Eclipses of the Sun and Moon occur in a pattern that repeats itself every 6585.32 days (around 18 years) called the Saros cycle.
- ~ The longest possible time of totality (complete eclipse) is 7 min 31 sec
- ~ The longest solar eclipse of the 20th century was on 30 June 1973
- ~ A total eclipse is only seen as total in the '**Zone of totality**' which is a strip across the surface of Earth around 400 km wide.
- ~ You must **never** look directly at the Sun, even during an eclipse. You must certainly **never** look through a telescope or binoculars at the Sun. **You will be blinded.**