

# 3: View using household items

## Danger!

How NOT to view a solar eclipse: with your eyes! *Viewing a solar eclipse is potentially hazardous and should only be attempted with caution. You should never, ever – under any circumstances – look directly at the Sun!* And no matter what anyone says, sunglasses will not provide adequate protection for your eyes. The only exception to this rule is the brief period of totality when the Sun is completely covered – but no-one in the UK will be able to see this on 20 March 2015.

Viewing an eclipse is dangerous because the Sun's photosphere emits very hot infrared radiation and high-energy

ultraviolet radiation. These types of radiation can burn your skin and hence they will do similar damage to your eyes if you look directly at the Sun. You only need to look at the Sun for a few seconds for your eyes to become permanently damaged.

In the same way, you should never look at the Sun through binoculars, a telescope or any other direct method. Astronomers use special solar telescopes or filters to view the Sun directly, but most of us do not have access to these types of equipment.

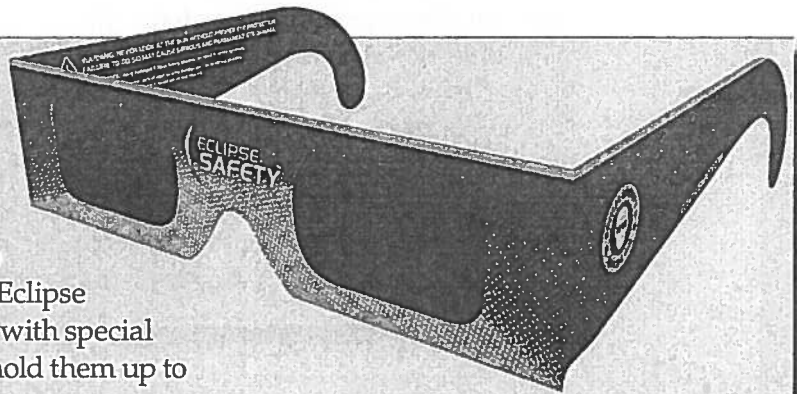
However, there are things we can get hold of easily – or even make – that are safe to use, as suggested below. ●

## Eclipse viewers

If you are able to find a pair of eclipse viewers or shades then that is a safe and enjoyable way to view the eclipse directly. Eclipse viewers are made of card with special material inlaid, and you hold them up to the eclipse to view it. If you manage to get hold of a viewer, you should check it for damage such as holes or scratches, as only undamaged filters are safe to use.

Eclipse shades are a bit like the 3D card glasses you used to get at the cinema, but they have special dark material in them to cut down the Sun's light by 100,000 times.

Never use material that just looks dark, such as bin liner or gift wrap. Even though



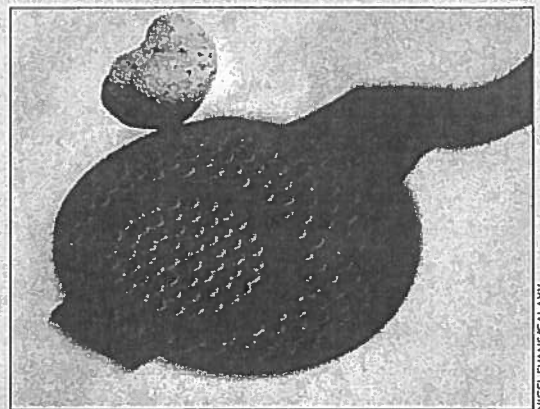
it cuts down the visible light, it might not cut out the dangerous infrared light, so you could still do permanent damage to your eyes.

Don't look up at the Sun then hold up the viewer – put the viewer to your eyes before you look at the Sun!

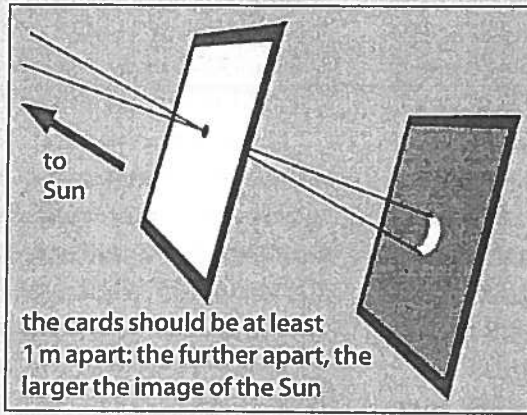
For more information on how to obtain eclipse shades, see section 4.

## Colanders

By far the simplest way to view an eclipse is to use an item you normally find in the kitchen: a colander. Stand with your back to the Sun and hold the colander in one hand and a piece of paper in the other. Hold the colander between the Sun and the paper and watch as you safely observe many images of the eclipse on one piece of paper!

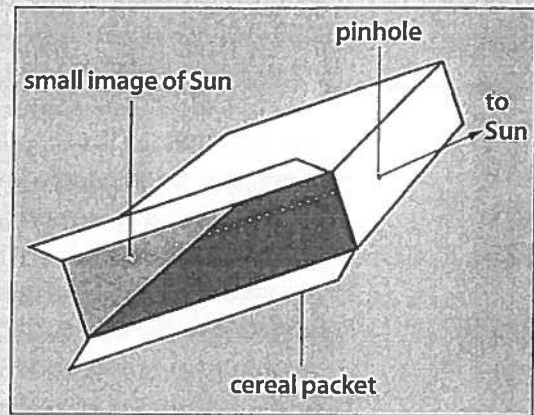


## Pinhole viewers



A simple yet safe way to view the solar eclipse is by making a pinhole viewer.

Pinholes allow light through them, and can create an image like a lens. All you need for this are two pieces of white card. Poke a small hole in one piece of card using a compass or a similar tool. Stand with your back to the Sun. Hold both cards up, with the one with the pinhole closer to the Sun. The light through the pinhole can be projected on to the other



piece of card, allowing the eclipse to be viewed safely.

An alternative to this is to use a cereal box or similar. Make a pinhole in one edge. Point this towards the Sun and you'll see a tiny image of the Sun projected on to the inside of the packet. Put white paper or card on the inside to make it easier to see.

*Never look through the pinhole at the Sun, but only at the projected image.*