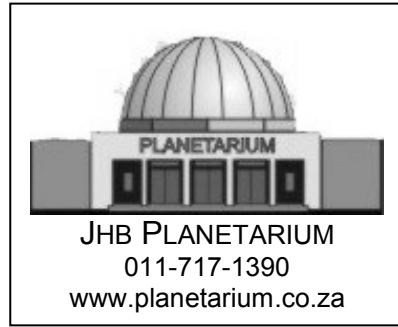
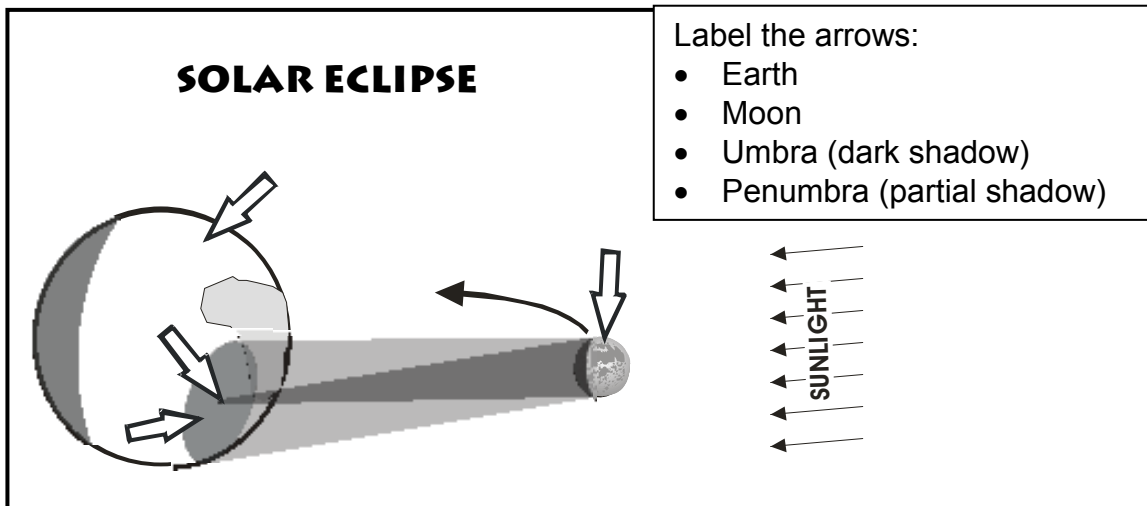


# A SOLAR ECLIPSE SCALE MODEL

DEMONSTRATE WHY  
ECLIPSES ARE SO RARE



YOU MUST USE EYE-PROTECTION, OR A PINHOLE PROJECTOR, TO WATCH THE  
ECLIPSE OF THE SUN



Label the arrows:

- Earth
- Moon
- Umbra (dark shadow)
- Penumbra (partial shadow)



MAKE A SCALE MODEL OF THE ECLIPSE  
The drawing above is not to scale.

**Earth:** 13 000 km diameter  
**Moon:** 3 500 km diameter  
**Earth to Moon distance:** 380 000 km

**You need:**

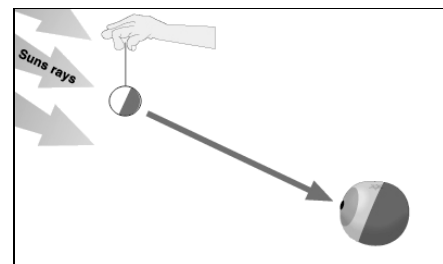
- a fizzpop (“stoksweet”) to represent the Moon – this is your “model Moon”;
- a tennis ball to represent the Earth; or you could draw a circle on the ground for the Earth.

**Calculate:**

The diameter of the real Earth is roughly \_\_\_\_\_ times the diameter of the real Moon.

Diameter of my model Moon: 2cm

Diameter of my model Earth: about \_\_\_\_\_



The distance from the real Earth to the real Moon is roughly \_\_\_\_\_ times the diameter of the real Earth.

Diameter of my model Earth: \_\_\_\_\_

Distance of my model Moon from my model Earth should be: \_\_\_\_\_

Hold your model Moon the correct distance from your model Earth, as in the diagram above, and see how difficult it is to line them up so that the shadow of the “Moon” falls on the “Earth”!