SHADOWS

Are formed when an opaque object is placed in front of the path of light.

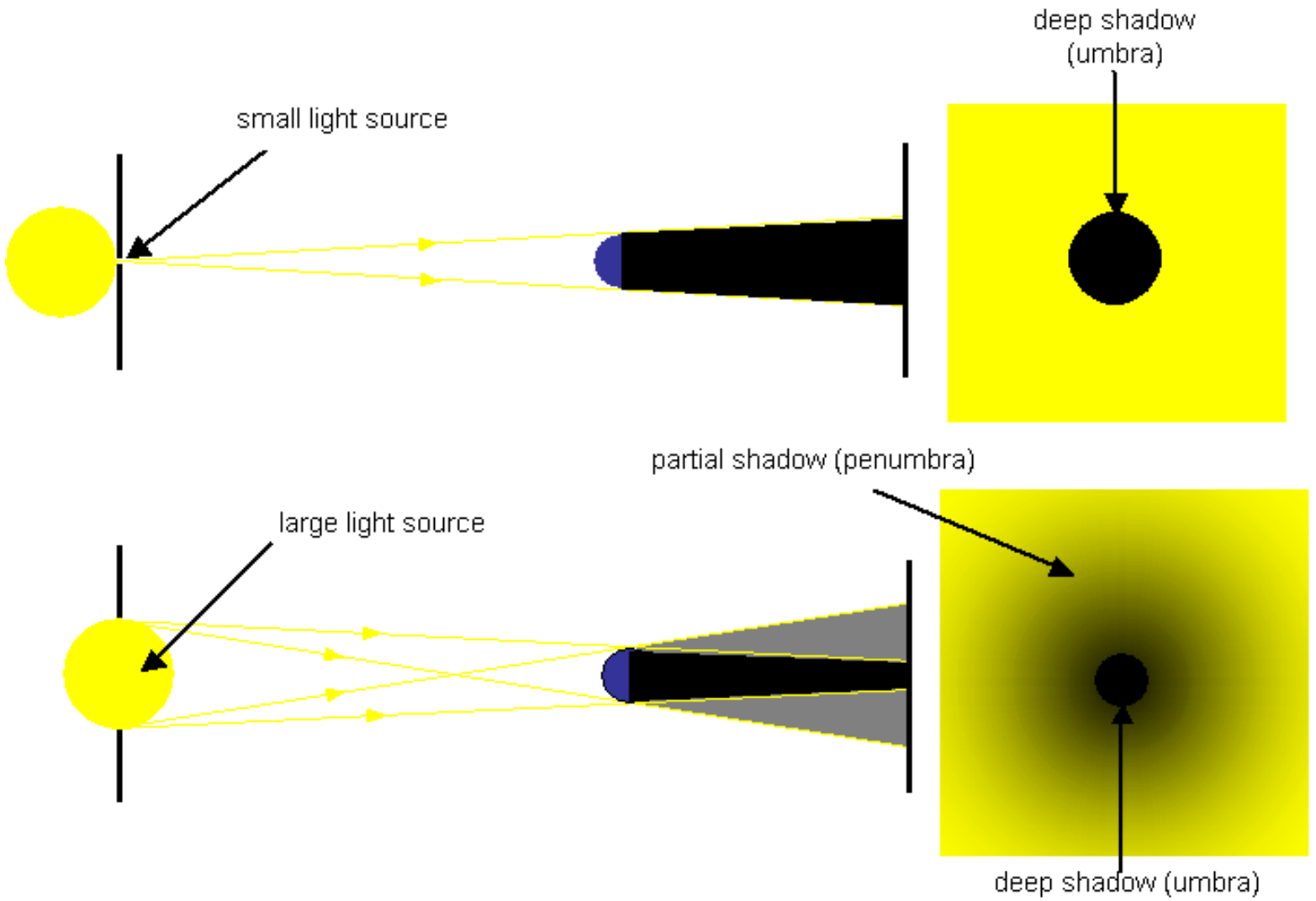
Shadows can be formed using

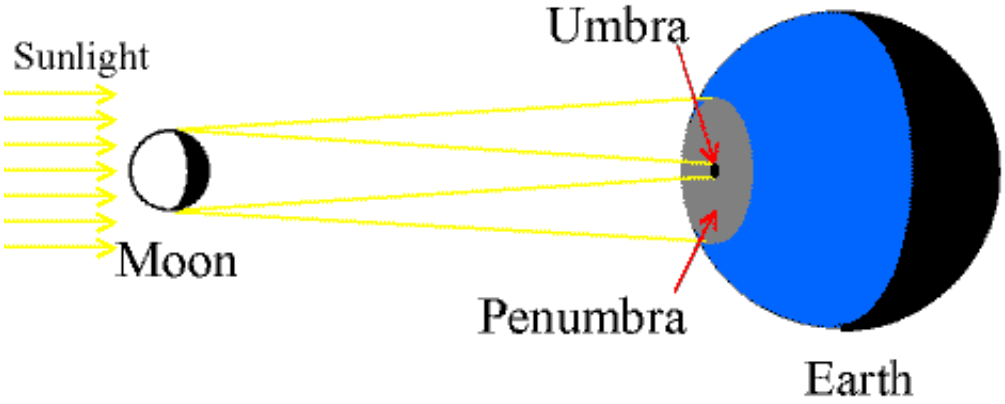
- Using a point source – which is a small light source such as a torch light

- Or an extended source – which is a large light source such as the sun

Solar eclipse

- When the moon passes between the sun and the Earth
- The moon fully or partially covers the view of the sun from the Earth
- The partially covered view is the area of the penumbra
- The fully covered view is the area of the umbra.


deep shadow
(umbra)
small light source
partial shadow (penumbra)
large light source
deep shadow (umbra)



TO DO: Label on the diagram where you would be if you were seeing an Annular eclipse

Total Solar Eclipse:

- The observer is inside the Moon's umbra.
- The Moon completely covers the Sun.

Partial Solar Eclipse:

- The observer is inside the Moon's penumbra.
- Only see part of the Sun covered by the Moon.

Annular Eclipse:

- The Moon is at or near apogee, and so is too small to cover the Sun.
- The Moon's umbra does not touch the Earth, so observer's in the shadow path see the Sun as a ring ("annulus")

Lunar Eclipse

A lunar eclipse occurs when the moon passes behind the Earth and is blocked by Earth (the Earth acts as the opaque object)

- **TO DO**: Draw a diagram of the Sun, Earth and Moon in a lunar eclipse position