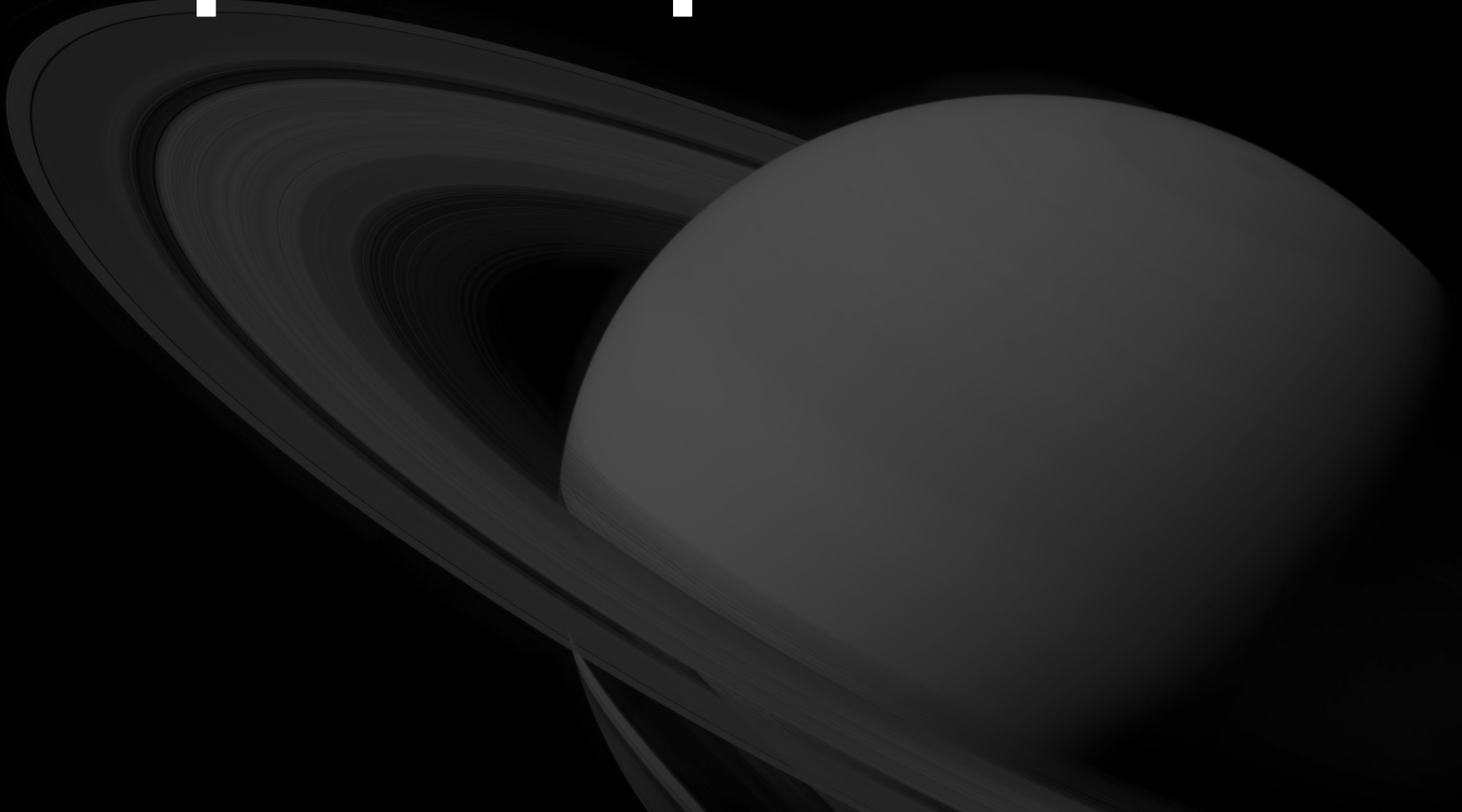


What activities can we do to explain eclipses?



Model of the Eclipse

Simple model, not to scale, helping students understand shadows and the positions of Sun, Earth and Moon during eclipses.



- ★ Large ball or globe for the Earth
- ★ Small ball for the Moon
- ★ Light source for the Sun (real Sun outside, or light/flashlight inside)
- ★ If inside, place the “Sun” as far away from the balls as possible.

<http://www.nisenet.org/catalog/exploring-solar-system-solar-eclipse>

Model of the Eclipse

Question for students:

- ★ **What happens when the Sun, the Earth and the Moon are aligned?**
- ★ **Can you model a lunar eclipse? a solar eclipse?**
- ★ **Does the Moon's shadow cover the whole Earth? Does the Earth's shadow cover the whole Moon?**
- ★ **Does the Moon move around the Earth? How does that affect the position of its shadow?**
- ★ **During the eclipse you modeled, what would people on Earth see? people on the Moon?**

Model of the Eclipse to Scale

Activity similar to the previous one, but with the Earth-Moon system to scale.

The perfect alignment for eclipses is much harder to obtain this way. This helps understand why eclipses don't happen every month.



http://nightsky.jpl.nasa.gov/download-view.cfm?Doc_ID=327

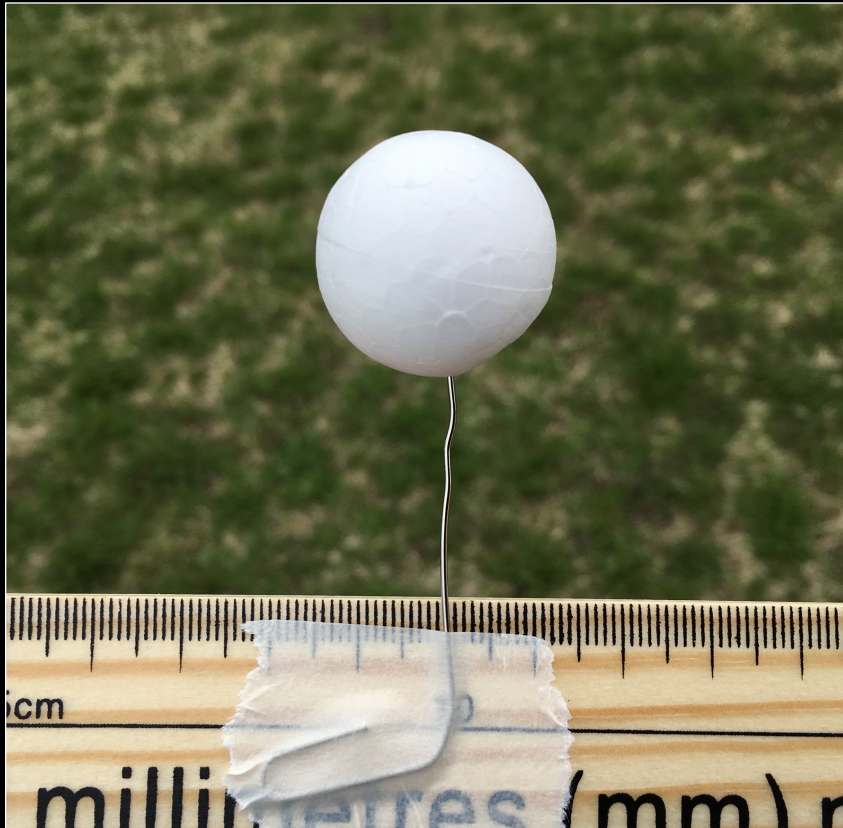
Model of the Eclipse to Scale

- ★ Styrofoam ball - 2.5 cm (Earth)
- ★ Styrofoam ball about 0.7 cm (Moon)
- ★ 2 paper clips
- ★ Tape
- ★ 1m ruler or stick

On the ruler, put the balls 75cm apart. This now represents the Earth-Moon system *to scale*.



Model of the Eclipse to Scale



- ★ Unfold a paper clip and insert it in the styrofoam ball.
- ★ Tape the paper clip to the ruler.

Model of the Eclipse to Scale



★ Set of 5 activities

★ \$35 US

★ Order from the
Astronomical Society of
the Pacific:

[https://myasp.astro society.org/
product/KT110/yardstickclipseactivity.php](https://myasp.astro society.org/product/KT110/yardstickclipseactivity.php)

Model of the Eclipse to Scale

- ★ Hold the ruler in the sunlight and align the Earth and the Moon to create eclipses, either solar or lunar.
- ★ Careful not to create shadows with your hands. If necessary, unfold the paper clips even more to put the balls further from the ruler.



Since the alignment can be difficult, we can use the shadows of both balls on the ground. They should be right on top of one another to create an eclipse.

Model of the Eclipse to Scale

Lunar Eclipse

Lit Moon



Eclipsed Moon



Model of the Eclipse to Scale

Solar Eclipse

Shadow of the Moon

