

WORKSHEET 1: Lunar eclipse demonstration

Demonstrate the lunar eclipse in a darkened room. Use a weaker directional planar light source as the Sun model. Use different sized spheres (balls) as models of the Earth and the Moon, keeping true to the ratio of sizes – the Moon is about 3 to 4 times smaller in diameter than the Earth. Illuminate the Moon model with light, place the “Earth” at a suitable distance between the “Sun” and the “Moon”. Move the “Moon” and observe the occurrence of a total and partial lunar eclipse.

Answer:

Check the blackout of the room and prepare a suitable light source according to the teacher's instructions. Choose suitable models for the Earth and the Moon, do not forget that the Earth is about 3 to 4 times larger in diameter.

Earth model: *Moon model:*.....

Place the Moon model in the light cone so that the light falls evenly on it.

Place “Earth” between “Sun” and “Moon”. Move the “Moon” to the sides and observe the occurrence of a total and partial lunar eclipse. Place the “Earth” close to the “Moon”, less than $\frac{1}{4}$ of the total distance “Sun” – “Moon”.

Draw the specific design of the experiment and the observed shape and size of the shadow during a total and partial lunar eclipse: