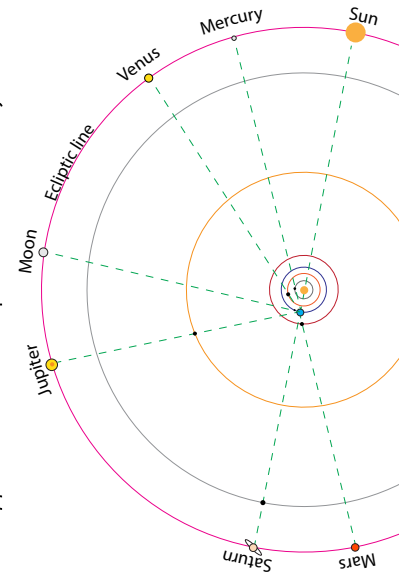


The best way to understand the night sky is through the classical idea of the ecliptic. Earth and the visible planets orbit the Sun in nearly the same plane (the ecliptic plane), and the Moon orbits the Earth in close to the same plane. So we see the Sun, Moon, and planets in nearly one line across the sky (the ecliptic). As the Earth rotates daily, the celestial sphere appears to rotate, and the Sun, Moon, and planets rise and set in sequence along the ecliptic. The Sun and the visible planets appear to move slowly along the ecliptic through the Zodiac constellations that divide it, with the planets' sequence and apparent motion changing based on where they are in their orbits.

The Ecliptic

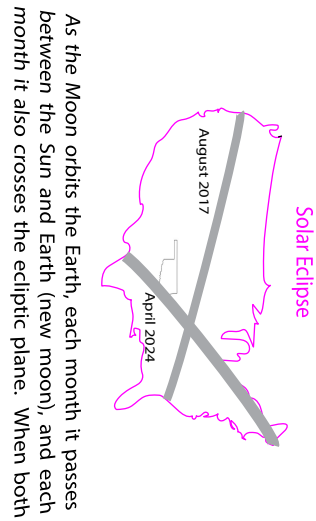
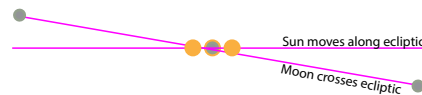


The Sun, Moon, and visible planets are nearly in the same plane as Earth, so viewed from Earth they appear in the same "ecliptic" line across the sky.



Solar Eclipse

As the Moon orbits the Earth, each month it passes between the Sun and Earth (new moon), and each month it also crosses the ecliptic plane. When both happen at the same time, the Moon is exactly between the Earth and Sun so a solar eclipse may be seen. The Sun's diameter is 400 times that of the Moon, but the Sun is 400 times further away than the Moon, so they appear to be about the same size. In a total solar eclipse some planets and stars can be seen in the daytime sky.



Construction Instructions

- 1) Poke out holes for stars using a push-pin.
- 2) Fold up along dashed lines.
- 3) Tape together edges with clear tape.

Viewing Instructions

- 1) Look in from below to see constellations.
- 2) In a small darkened room, shine cellphone light in from below to see stars on ceilings and walls.

Selected constellations, asterisms, and bright stars shown. Sun, Moon, and planets not to scale.

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