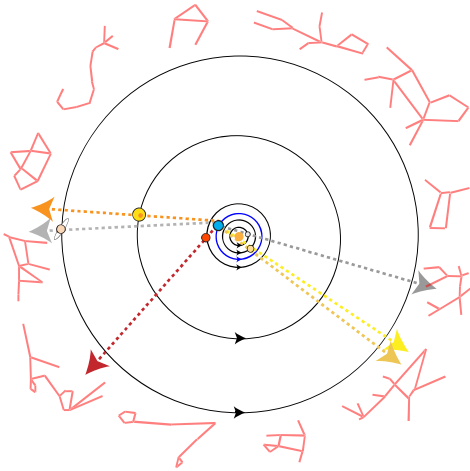


The best way to understand the night sky is through the classical idea of the ecliptic. Earth and the visible planets orbit the Sun in nearly the same plane (the ecliptic plane), and the Moon orbits the Earth in close to the same plane. So we see the Sun, Moon, and planets in nearly one line across the 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. From the perspective of Earth, 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. Uranus and Neptune are also on the ecliptic, but are not visible to the unaided eye, so they are not shown here.

The Ecliptic



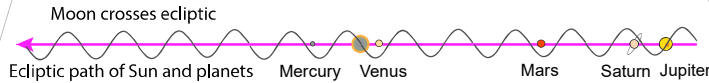
June 21st 2020 Solar Eclipse

A partial eclipse will be visible across most of the Middle East and Asia. A total eclipse will be visible in Saudi Arabia, Pakistan, India, China, and Taiwan. The Moon is only about 1/400 the diameter of the Sun, but it is about 400 times more distant than the Sun, so it appears to be the same size in the sky. Since Earth's orbit and the Moon's orbit are not perfect circles the distance varies slightly. During this annular or ring eclipse the Sun appears to be slight larger than the Moon.



sunearth.gsfc.nasa.gov/eclipse/ (c) 2000 A. T. Sindrair

As the Moon orbits the Earth, each month it passes between the Sun and Earth (new moon), and each month it crosses the ecliptic plane twice. When it crosses during a new moon, the Moon is exactly between the Earth and Sun so a solar eclipse may be seen. In a total solar eclipse some planets and stars can be seen in the daytime sky. In this "Ring of Fire" annular eclipse the Sun is visible at the edges, but it might be dark enough to see Venus to the right and Mercury to the left of the Sun, and the nearby bright stars in Gemini and Orion.



Solar Eclipse

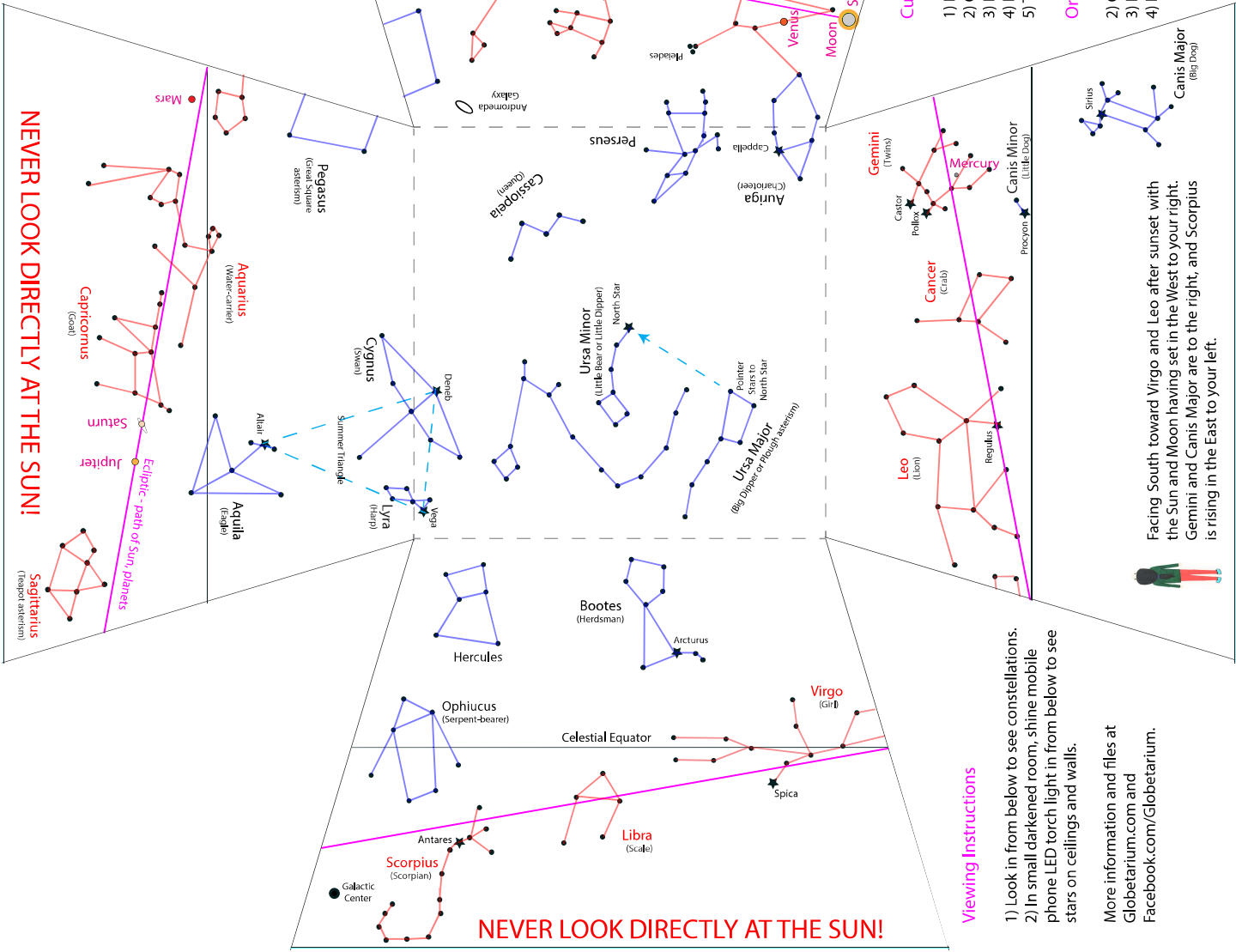
Sun and visible planet positions on June 20, 2020

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Know the sky • Know the ecliptic • Know the G



NEVER LOOK DIRECTLY AT THE SUN!

NEVER LOOK DIRECTLY AT THE SUN!

The Sun appears to move 1/12th the way around the ecliptic each month as the Earth orbits the Sun, while the Moon appears to circle the ecliptic each month as it orbits the Earth. Visible planets move at different speeds based on their own and Earth's orbits. The entire ecliptic appears to spin once every day as Earth spins.

Sun, Moon and visible planet positions on May 27, 2020

Cut and Tape

- 1) Print on both sides of paper.
- 2) Cut along outlines of windmill shape.
- 3) Poke out holes for stars using a push-pin.
- 4) Fold up along grey dashed lines.
- 5) Tape along edges with clear tape.

Or Fold and and Shape

- 2) Cut into square shape
- 3) Fold diagonally twice in X shape
- 4) Fold blank triangles over twice

Viewing Instructions

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

More information and files at Globetarium.com and [Facebook.com/Globetarium](https://www.facebook.com/Globetarium).



Facing South toward Virgo and Leo after sunset with the Sun and Moon having set in the West to your right. Gemini and Canis Major are to the right, and Scorpius is rising in the East to your left.



Canis Major (Big Dog)