

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.

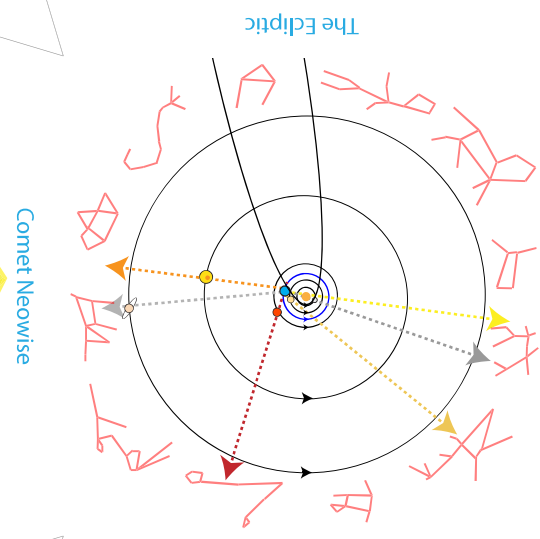
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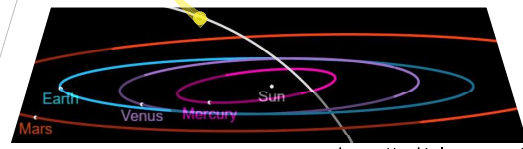
Know the sky • Know the ecliptic • Know the G

Sun and visible planet positions  
on July 17, 2020



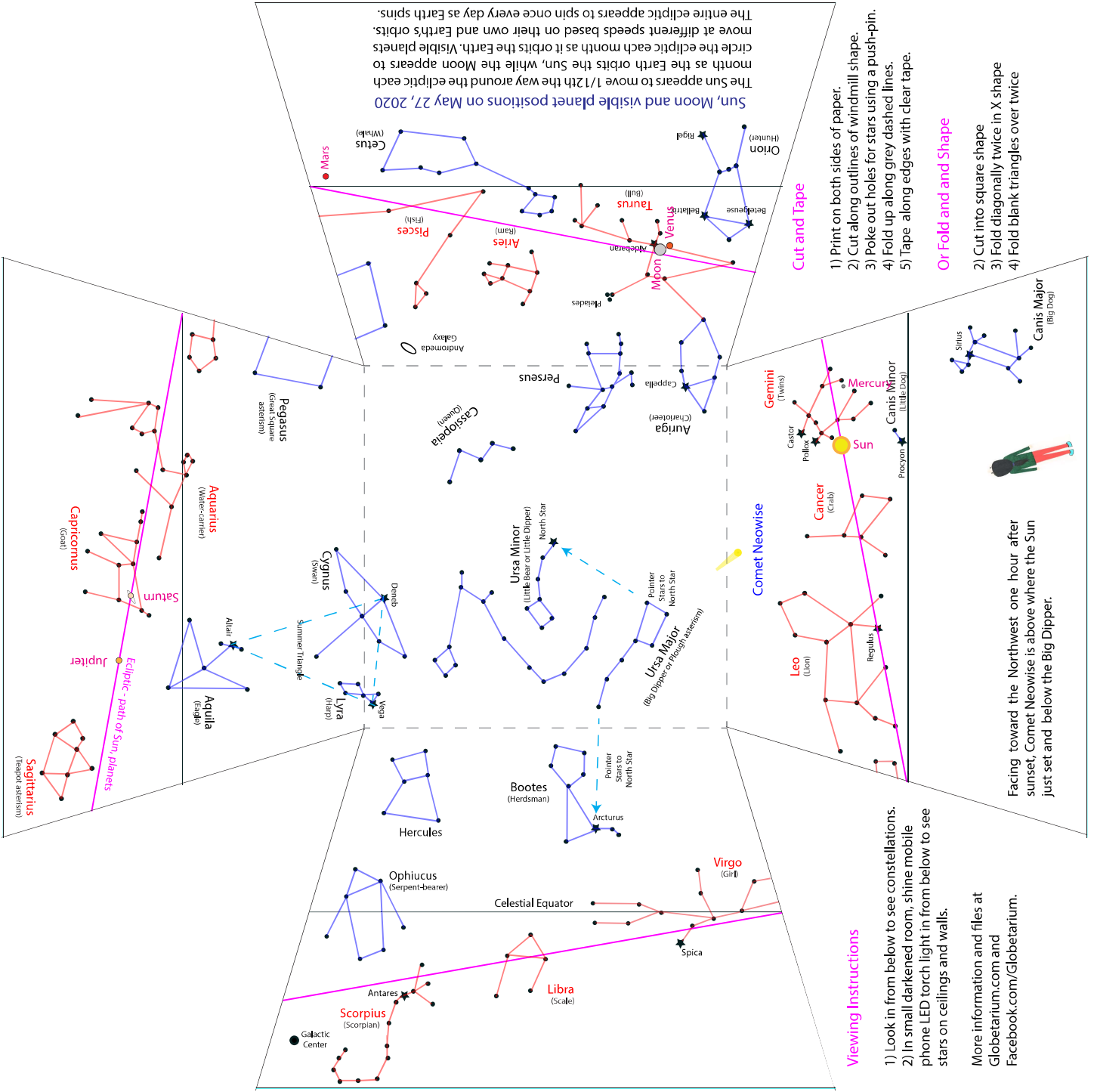
Comet Neowise is visiting the inner solar system for the first time in over 6800 years. As it approaches the Sun it heats up and frozen gases and water vapor are released, creating a hazy head of the comet that becomes visible. The gases and water vapor are also pushed away by the solar wind, creating a tail that always points away from the Sun. So even as the comet speeds around the Sun, the tail points away from the Sun. As the comet moves further from the Sun it cools down and the head and tail become less visible. Right now it is visible below the Big Dipper once it gets dark after sunset. During the day it is still in the daytime sky, but not bright enough to be seen in the Sun's glare.

Comet Neowise Orbit



<https://ssd.jpl.nasa.gov/>

Like most comets, Neowise's orbit is not in the same ecliptic plane as Earth and the visible planets. It passed through the plane in June, was closest to the Sun on June 30, is currently a little closer to the Sun than the Earth, and will be closest to Earth on July 22/23. Since it is now "above" the ecliptic it is visible above Leo which is on the ecliptic but still well below the Big Dipper. As it gets closer to Earth it rises further above the ecliptic plane and becomes easier to see further above the horizon, but its head and tail also shrink as it cools down further from 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

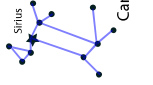
#### Comet Neowise

#### 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](http://Globetarium.com) and [Facebook.com/Globetarium](https://www.facebook.com/Globetarium).

Facing toward the Northwest one hour after sunset, Comet Neowise is above where the Sun just set and below the Big Dipper.



S Sirius

Canis Major (Big Dog)

Comet Neowise



Comet Neowise

Comet Neowise