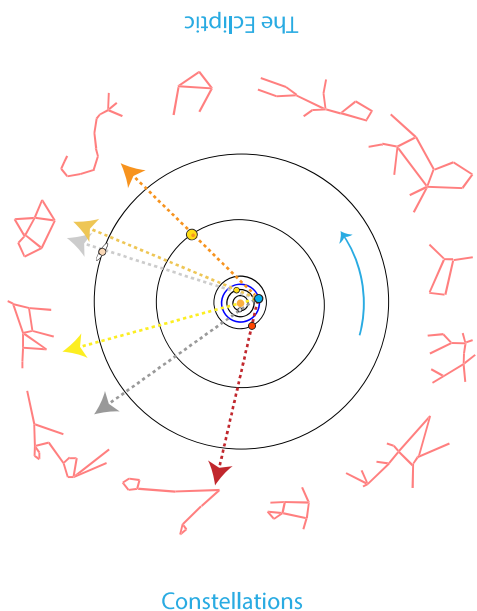


The best way to understand the night sky is through the classical idea of the ecliptic. Earth and the visible planets orbit the Sun in nearly the same plane (the ecliptic plane), and the Moon orbits the Earth in close to the same plane. So we see the Sun, Moon, and planets in nearly one line across the 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 the are not shown here.



February 2019 Night Sky Highlights

February 4: New Moon. The Moon in its monthly orbit around Earth will be between the Earth and the Sun and so it will set with the Sun and not be in the night sky. It will be near the Sun in the daytime sky, but it will not be visible in the Sun's glare. It will be slightly below the ecliptic plane so it will not block the Sun. Traditionally "New Moon" meant the slight Crescent Moon that is visible just after sunset a few days later.

February 19: Full Moon, Supermoon. The Moon will be opposite the Sun and so will it appear as a full disk and will reflect the most light back on Earth. Since it is opposite the Sun, as the Earth spins the Full Moon rises just as the Sun sets, and it sets just as the Sun rises. The Moon will be near its perigee, so it will be a few percent closer than usual and will appear a little larger than usual.

Constellations are groups of stars in memorable shapes that divide up the sky in regions. The modern system is based on ancient Babylonian and Greek constellations. Most important are the 12 Zodiac constellations (mostly animals - hence the "zoo" of Zodiac) that divide up the ecliptic path of the sun and planets into 12 segments of 30 degrees each. The Zodiac "signs" traditionally reflect the constellation that the sun is in during that month, but due to Earth's 22,000-year wobble cycle the Zodiac is now out of sync by about a month. The imaginary lines connecting stars into constellations are not always very evocative of the constellation names, so the famous children's illustrator H.A. Rey ("Curious George") redrew them in the 1950s and many of his versions are now standard.

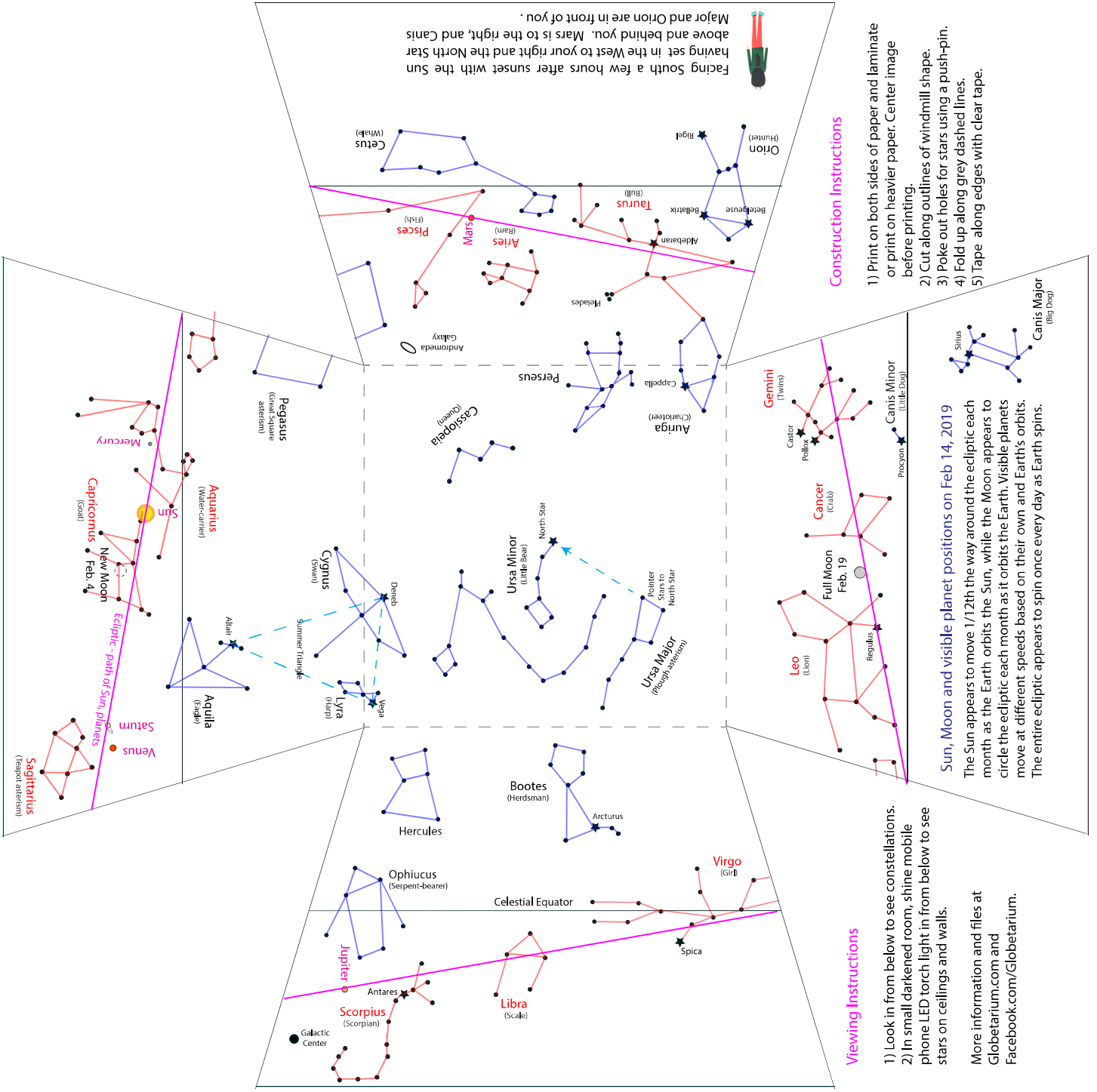
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Know the sky • Know the ecliptic • Know the G

The illustration shows a person in a purple jacket and blue pants standing on a small globe of Earth. They are looking up at a starry sky filled with yellow stars and several question marks. The text 'Star finder, celestial sphere, pinpoint planetarium' and 'Globetarium.com' is written next to the person. Social media links for Twitter and Facebook are also present.



Facing South a few hours after sunset with the Sun above and behind you, Mars is to your right and the North Star Major and Orion are in front of you.

Sun, Moon and visible planet positions on Feb 14, 2019

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.

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).

Construction Instructions

- 1) Print on both sides of paper and laminate or print on heavier paper. Center image before printing.
- 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.