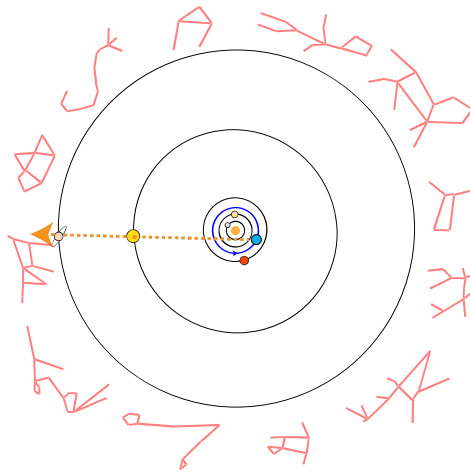


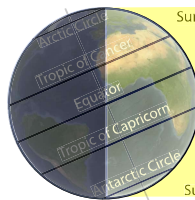
Jupiter orbits the Sun every 12 years and Saturn orbits the Sun every 29 years. So in 20 years Jupiter goes around the Sun once and then again 2/3 of the way, while Saturn goes around the Sun about 2/3 of the way. So starting from a "conjunction" in which the planets are at the same spot in their orbits and appear close to each other "horizontally" in the sky from Earth, they will be at the same place again in about 20 years, forming another conjunction. Since the planets are not on exactly the same plane, they might still be a couple of degrees separate vertically in the sky. In a great conjunction the planets are also close vertically, which happens about once every 400 years, and the last Great Conjunction at night was 800 years ago. The great conjunction this year happens to be on the Winter Solstice.

Great Conjunction



Solstice = "Sun Stationary"

The Northern Hemisphere's Winter Solstice occurs on December 31st this year when the South Pole will be most tilted toward the Sun in the Earth's orbit. The Sun at noon has been falling lower in the sky since the Summer Solstice and the fall gradually comes to a stop on the Winter Solstice and will then rise again. Sunrises and sunsets will start slowly shifting toward the Northeast and Northwest and will be due East and West on the Fall Equinox.



Sun below horizon all day above Arctic Circle

Sun directly overhead at noon on Tropic of Capricorn

Sun shines all day below Antarctic Circle

Sun and visible planet positions on December 21, 2020

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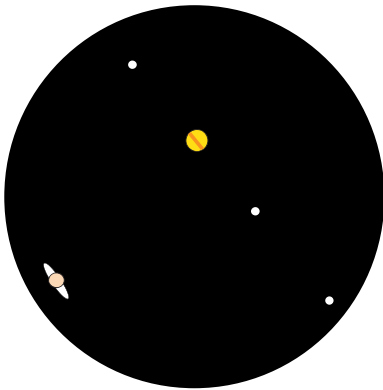
Star finder, celestial sphere, pinpoint planetarium Globetarium.com

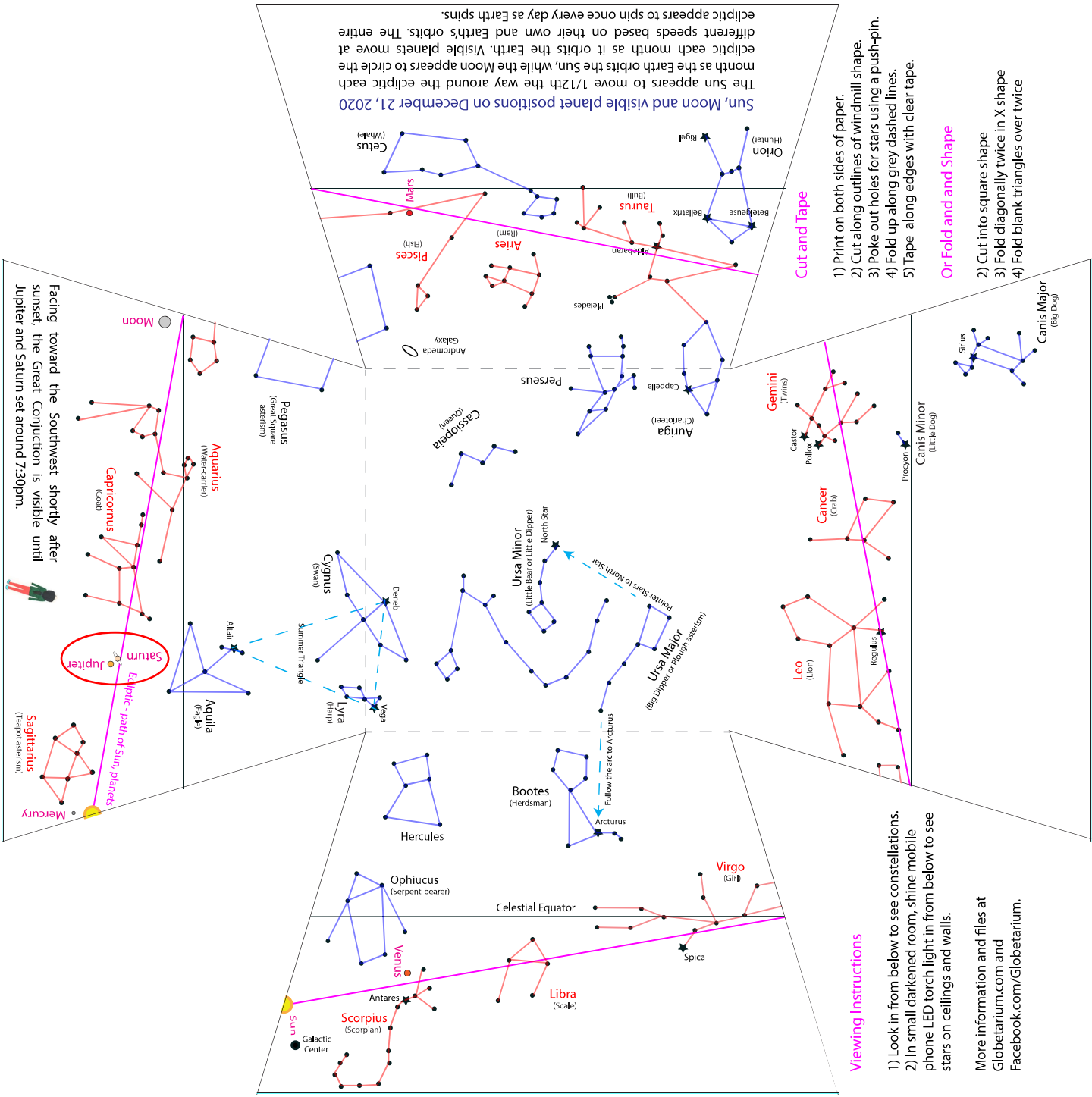
Like us at [Facebook.com/Globetarium](https://facebook.com/Globetarium)

Know the sky • Know the ecliptic • Know the G

The illustration shows a person in a purple and blue space suit standing on a small globe of Earth. The background is a dark space filled with yellow stars and two large yellow question marks.

The rings of Saturn and moons of Jupiter can be seen in the same telescope field of vision





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.

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 toward the Southwest shortly after sunset, the Great Conjunction is visible until Jupiter and Saturn set around 7:30pm.

Ecliptic - path of Sun, planets

Summer Triangle

Pointer Stars to North Star

Follow the arc to Arcturus

Follow the arc to Jupiter

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