

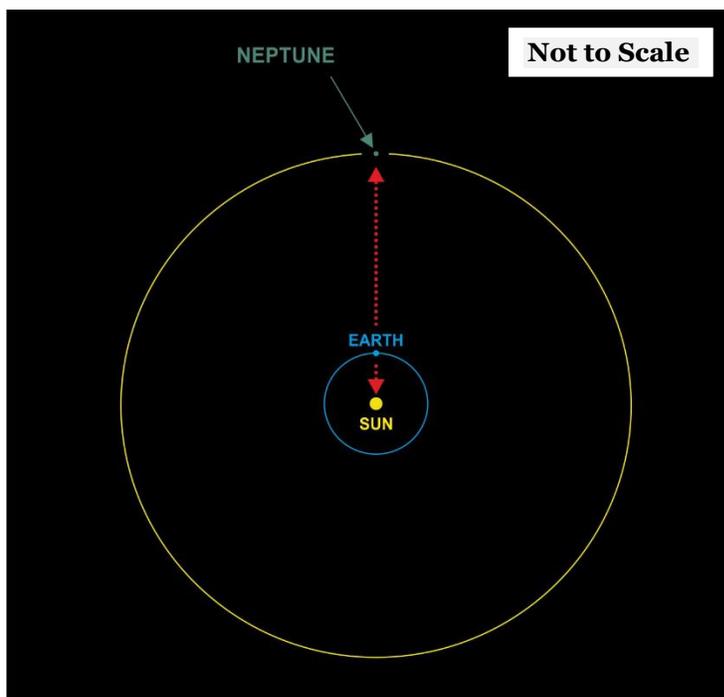
# Neptune Closest to Earth for 2022

- a September 2022 Sky Event from the [Astronomy Club of Asheville](#)

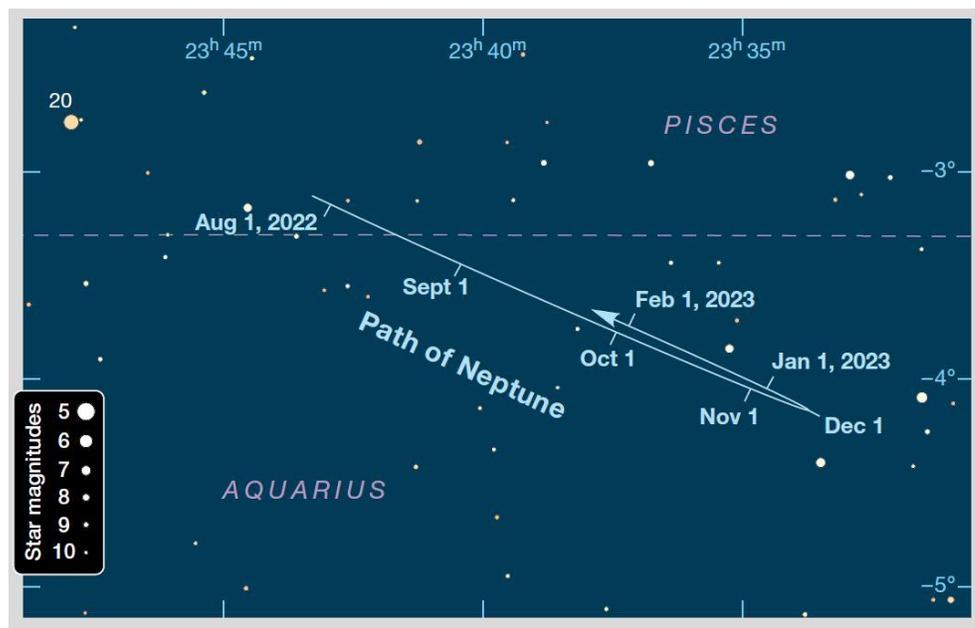
Earth reaches "opposition" with the solar system's most distant planet on **September 16<sup>th</sup>**. At opposition, speedier Earth, moving counterclockwise on its inside lane, laps the outer planet, positioning the Sun directly opposite the Earth from Neptune.

This puts Neptune closest to Earth for the year and in great observing position for those using a telescope.

Rising at dusk and setting at dawn, the planet Neptune is visible all night during the month of September. Located in the constellation Aquarius (near the Pisces border), Neptune is positioned some 2.7 billion miles (or 4 light-hours) away from Earth at "opposition" this month.



At magnitude 7.8, Neptune will appear as a small blue disk in most amateur telescopes. You will find Neptune along the ecliptic in the constellation Aquarius this year.



Neptune's path through Aquarius is plotted at the left through January 2023.

Like Uranus, Neptune has an upper atmosphere with significant methane gas (CH<sub>4</sub>). Methane strongly absorbs red light; thus, the blue end of the light spectrum, from the reflected sunlight, is what primarily passes through to our eyes, when observing this distant planet.

Above chart courtesy of [Sky & Telescope](#)

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## Neptune's Discovery

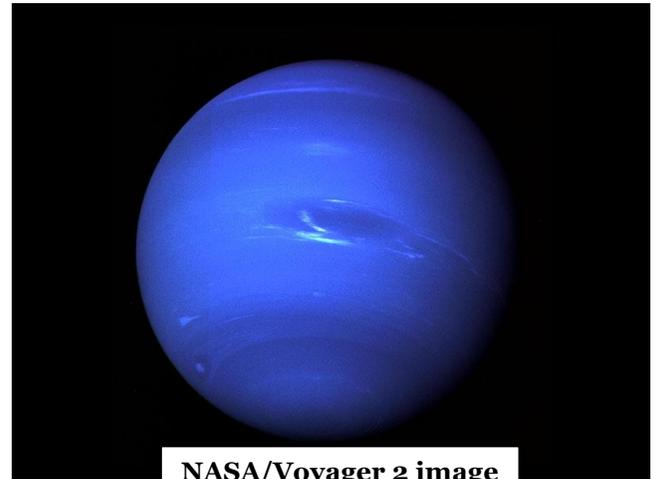
Neptune was the 2<sup>nd</sup> solar system planet to be discovered! Uranus' discovery preceded it, when William Herschel observed its blue disk, quite by accident, in 1781. But Uranus' orbit had an unexplained problem – a deviation that astronomers called a “perturbation”.

Johannes Kepler's laws of planetary motion and Isaac Newton's laws of motion and gravity could not adequately explain this perturbation in Uranus' orbit. They suspected that a massive object, out beyond Uranus, was “pulling” on the planet.

Mathematicians John Adams and Urbain Le Verrier each independently calculated the approximate celestial position of a solution. Subsequently, using a 9-inch refractor telescope at the Berlin Observatory, Johann Galle, by moving the telescope to the mathematically calculated coordinates, discovered Neptune in 1846 – problem solved!

Although Neptune was “discovered” by Johann Galle in 1846, he was not the first person to lay eyes on the planet's blue disk! On two different occasions, in 1612 and 1613, Galileo recorded Neptune's position while he was observing much brighter Jupiter. However, using his modest telescope, Galileo did not recognize it as a planet. He likely thought it was a faint background star.

Find out more about Neptune at this [NASA link](#).



NASA/Voyager 2 image