

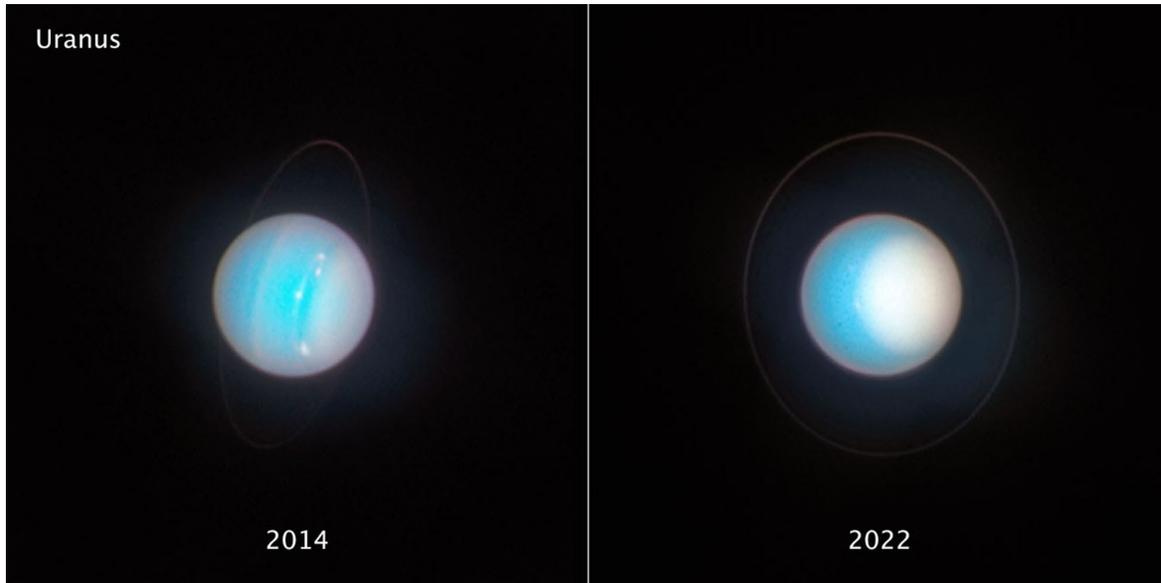


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## June's Night Sky Notes: Seasons of the Solar System

By: Kat Troche

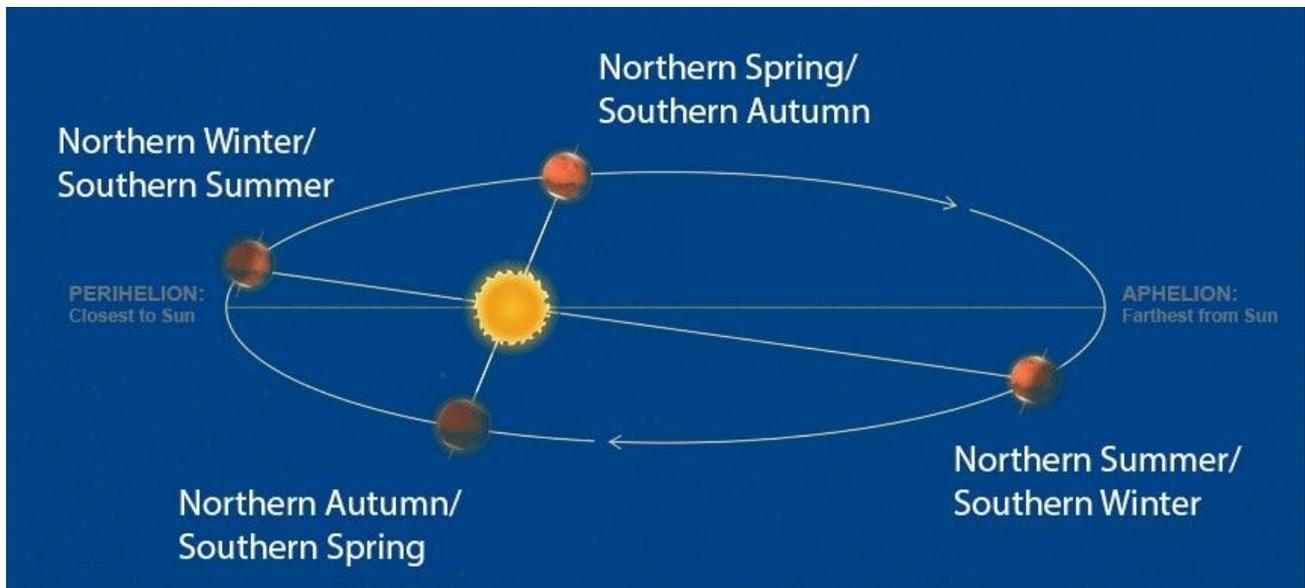


*Uranus rolls on its side with an 84-year orbit and a tilt just  $8^\circ$  off its orbital plane. Its odd tilt may be from a lost moon or giant impacts. Each pole gets 42 years of sunlight or darkness. Voyager 2 saw the south pole lit; now Hubble sees the north pole facing the Sun. Credit: NASA, ESA, STScI, Amy Simon (NASA-GSFC), Michael Wong (UC Berkeley); Image Processing: Joseph DePasquale (STScI)*

Here on Earth, we undergo a changing of seasons every three months. But what about the rest of the Solar System? What does a sunny day on Mars look like? How long would a winter on Neptune be? Let's take a tour of some other planets and ask ourselves what seasons might look like there.

### Martian Autumn

Although Mars and Earth have nearly identical axial tilts, a year on Mars lasts 687 Earth days (nearly 2 Earth years) due to its average distance of 142 million miles from the Sun, making it late autumn on the red planet. This distance and a thin atmosphere make it less than perfect sweater weather. A recent weather report from Gale Crater boasted a high of  $-18$  degrees Fahrenheit [for the week of May 20, 2025](#).

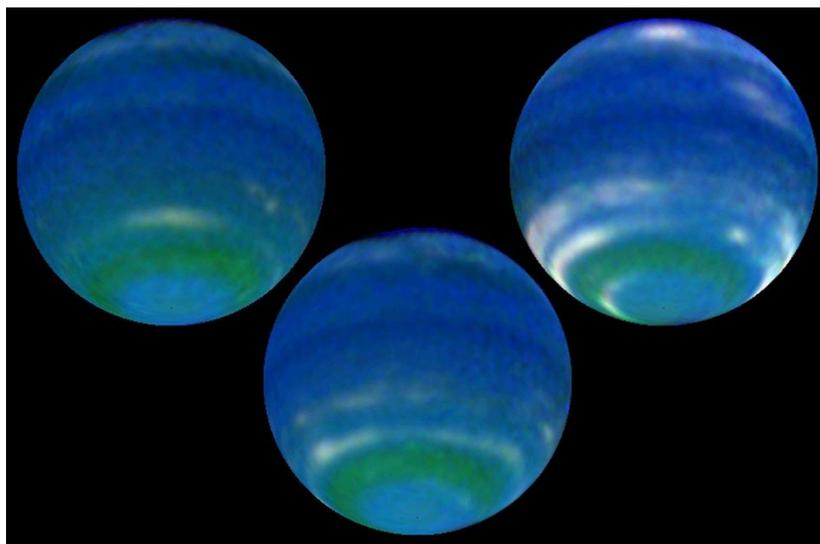


*An artist's rendition of Mars' orbit around the Sun, and its seasons. Credit: NASA/JPL-Caltech*

## Seven Years of Summer

Saturn has a 27-degree tilt, very similar to the 25-degree tilt of Mars and the 23-degree tilt of Earth. But that is where the similarities end. With a 29-year orbit, a single season on the ringed planet lasts seven years. While we can't experience [a Saturnian season](#), we can observe a [ring plane crossing](#) here on Earth instead. The most recent plane crossing took place in March 2025, allowing us to see Saturn's rings 'disappear' from view.

## A Lifetime of Spring



*NASA Hubble Space Telescope observations in August 2002 show that Neptune's brightness has increased significantly*

*since 1996. The rise is due to an increase in the amount of clouds observed in the planet's southern hemisphere. Credit: NASA, L. Sromovsky, and P. Fry (University of Wisconsin-Madison)*

Even further away from the Sun, each season on Neptune lasts over 40 years. Although changes are slower and less dramatic than on Earth, scientists have observed seasonal activity in Neptune's atmosphere. [These images](#) were taken between 1996 and 2002 with the Hubble Space Telescope, with brightness in the southern hemisphere indicating seasonal change.

As we welcome summer here on Earth, you can build a [Suntrack](#) model that helps demonstrate the path the Sun takes through the sky during the seasons. You can find even more fun activities and resources like this model on NASA's [Wavelength and Energy](#) activity.