Sky highlights for October 2025

In the evening sky, one hour after sunset, golden **Arcturus** sinking in W to WNW and blue-white **Vega** not far W to WSW of overhead are the two most prominent stellar objects. Next in brilliance is **Saturn,** climbing through ESE toward SE as this month progresses. Other bright stars are **Altair** and **Deneb** completing the Summer Triangle with Vega; and the red supergiant star **Antares,** heart of Scorpius, in SW, sinking very low before month's end.

Through a telescope, **Saturn's rings** are presented 1.4° to 0.6° from edge-on to Earth during October 2025, and so appear as a narrow line, almost like a needle piercing a ball of yarn. In late November, as Earth approaches Saturn's ring plane before turning away, we will see the rings less than 0.4° from edge-on! Take the opportunity this autumn for these rare views. In 2032, we will have our most open view of the ring system, nearly 27° from edge-on. Three times in 2038-39, the rings will be presented edge-on to Earth, with the ringless planet visible on all three occasions, unlike their single edge-on presentation in March 2025 which was hidden from sight only 10° from the Sun. **Titan,** Saturn's biggest moon, in the same plane as the rings, appears as an 8th-mag. "star" at most 4 ring-lengths from the nearer ring edge. If you have a large telescope providing clear views at high magnification, **do not miss the transit of Titan's shadow cast on the northern limb of Saturn**, a very brief event on Sunday evening, Oct. 5, at 10:32 p.m. PDT (Monday, Oct. 6, at 1:32 a.m. EDT). Saturn's rings will then be 1.3° from edge-on. The Sun will be 2.3° south of the ring plane, causing Titan's shadow to be cast on the far northern edge of the planet's disk. This is the last of a series of shadow transits; the next will occur in 2038-39, when the Sun will again be near Saturn's equatorial ring plane.

In October, as Saturn passes high in the southern sky in the late evening, use binoculars to look for a 1° by 3° rectangle of stars of mag. 4.4 to 5.1, in the same binocular field as Saturn, to its left and lower left. The star 27 Piscium marks the upper right corner of the rectangle, closest to Saturn. Its other stars, in counterclockwise order, are 29 Psc at upper left corner, 33 Psc at lower left and 30 Psc at lower right corner of the rectangle. These four stars have been said to represent the body or shell of a **Turtle,** with the neck and head marked by a line of two additional stars extending 2.8° WNW (upper right) from 27 Psc. They are 5.9-mag. 24 Psc, and 5.5-mag. 20 Psc, respectively. See below for more on the interesting history of this asterism!

In October, Saturn retrogrades 1.9°, beginning the month 1.2° WNW of 4.9-mag. 27 Psc, and ending the month 2.9° west of the star. In a dark sky, **Neptune** at mag. 7.8 can be found with optical aid 3.1° to 4.1° from Saturn. Neptune retrogrades nearly ¾° in October, and passes 1¾° due north of 29 Psc on Oct. 10-11, appearing directly above the 5.1-mag. star as they pass directly south.

Arcturus is 33° due north of the Sun on Oct. 29, placing it 33° directly above the midday Sun on that date. It is up much longer than the Sun, so **you can spot it very low in ENE an hour before sunrise *and* very low in WNW an hour after sunset on that same date!** On what date will you first spot Arcturus in the morning, and on what date in early November will you last see it in the evening?

The Moon is visible an hour after sunset daily Oct. 1-8, and again Oct. 23 or 24 through Nov. 6. Watch the Moon pass Saturn on Oct. 5 and Nov. 1, and Antares on Oct. 24.

On the evening of Oct. 9, the Moon will pass through the Pleiades star cluster. Use binoculars to see some of its stars around the Moon, and use a telescope to see stars pop out along the dark edge of the Moon, as seen from Palm Springs, CA, on Oct. 9 at 9:08, 9:31, and 9:46 p.m. PDT. From East Lansing, MI, reappearances of Pleiades stars will appear after midnight, thus on Oct. 10, at 12:22 a.m. and at 1:00 a.m. EDT.

In the morning sky, one hour before sunrise, the brightest starlike objects are **Venus,** very low in E to ESE; **Jupiter** high in southern sky; and the Dog Star, blue-white **Sirius,** twinkling noticeably in SSE to SSW. (You can confirm its Sirius by noting that the belt of Orion, the Hunter, extended southeastward, points to it.)

Follow the Moon an hour before sunrise each morning Oct. 6-19, and watch it wane from full, low in the west on Oct. 6; through Taurus, the Bull, passing **the Pleiades, Aldebaran and Hyades, and the Bull's horns** Oct. 9-11. Continuing eastward, the Moon enters Gemini on Oct. 12, and forms attractive patterns with bright **Jupiter** and that constellation's **"Twin" stars, Pollux and Castor,** on the next two mornings. By the morning of the 16th, the crescent Moon is in the eastern sky, very close to **Regulus,** heart of Leo, the Lion. On the 18th, the 8-percent crescent appears 13° upper right of **Venus,** and on the 19th, the 4-percent crescent stands just 3°-4° to Venus' lower right.

On the morning of Oct. 13, when the Moon passes Last Quarter phase and appears half-full near Jupiter, the Moon is cutting across the Earth's orbit just 3½ hours ahead of us in our motion around the Sun. On Oct. 17, Jupiter lies directly ahead of Spaceship Earth in our orbit around the Sun. In coming months, we will overtake slower-moving Jupiter. The giant planet will appear at opposition, 180° from the Sun, in early January, around the same date fast-moving Venus has moved around to superior conjunction, on the far side of the Sun. So, between now and early January, watch Jupiter sink toward the western horizon at dawn, while Venus sinks very low in the eastern sky week by week. By sometime in December, Venus will become too close to the Sun to be seen.

The Moon might be seen on one additional morning beyond Oct. 19, but you will have to look about half an hour before sunup and need a very clear sky and an unobstructed view. Using binoculars on Oct. 20, look for a very thin one-percent crescent 10° lower right of Venus. The Moon will be only 10° from the not-yet-risen Sun, and about 23 hours before New from Palm Springs.

This year, the **peak of the Orionid meteor shower coincides with the date of New Moon, Oct. 21.** Conditions are deal! Best time to look is about five to 1½ hours before sunrise.

On mornings when the Moon is absent or not bright, **Uranus,** of mag. 5.6, can be spotted with binoculars in the same field of view as the Pleiades cluster. In October, the planet is 4.3° SSE of 2.9-mag. Alcyone, the Pleiades' brightest star, and 3.0° to 2.1° ENE of the 5.7-mag. star 13 Tauri. Note the slightly fainter 6.1-mag. star 14 Tauri 21 arcminutes (about 1/3 of a degree) east of 13.

More on Saturn and Neptune … Bring back the Turtle!

Use a finder chart to locate Neptune with binoculars or finder scope by star hopping, using Saturn and stars of the Turtle asterism as starting points.

The now obsolete asterism **Testudo, the Turtle,** located between the Circlet of Pisces and the star Iota in Cetus, consists of the following **six stars** in Pisces:

The body, or shell, roughly rectangular, 1° in width, and 3° in height,
27 Piscium (mag. 4.9)
29 Piscium (mag. 5.1)
33 Piscium (mag. 4.6)
30 Piscium (mag. 4.4)

The neck and head of the Turtle, extending 2.8° WNW from 27 Piscium:
24 Piscium (mag. 5.9)
20 Piscium (mag. 5.5)

Following is an excerpt from
https://en.wikipedia.org/wiki/Pisces_(constellation)

In 1754, the botanist and author John Hill proposed to sever a southern zone of Pisces as **Testudo** (the Turtle).[36] 24 – 27 – YY(30) – 33 – 29 Psc.,[37] it would host a natural but quite faint asterism in which the star 20 Psc is the head of the turtle. While Admiral Smyth mentioned the proposal,[38] it was largely neglected by other astronomers, and it is now obsolete.[37]

Footnotes:
36• *Allen, R. H. (1963). Star Names: Their Lore and Meaning (Reprint ed.). New York, NY: Dover Publications Inc. p. 163 342. ISBN 978-0-486-21079-7.*
37 • Ciofi, Claudio; Torre, Pietro, Costellazioni Estinte (nate dal 1700 al 1800): Sezione di Ricerca per la Cultura Astronomica
38 • Smyth, W. H., (1884) *The Bedford Catalogue*, p. 23

See also
https://en.wikipedia.org/wiki/Pisces_in_Chinese_astronomy

Refer to this especially useful chart showing the motions of Saturn and Neptune near the Turtle asterism in 2025-26, in *Sky & Telescope,* June 2025, page 51.

Unfortunately, that chart. In print or digital form, is available only to subscribers. The chart shows both planets' retrograde loops surrounding their oppositions of September 2025. **All six stars of the Turtle asterism** listed above **are plotted, but not labeled. Five additional stars plotted, but not labeled, are listed here.**

HIP 417 (= HR 2 = HD 6), mag. 6.3, 2.65° NNE of 29 Psc;
4 Cet, mag. 6.4v; and **5 Cet,** mag. 6.2v, both stars actually in Pisces, 9.2' (arcminutes) apart, 1.55° to 1.70° ENE of 29 Psc. [v = variable star.]
XZ Psc, mag. 5.8v, 2.65° WNW of HIP 417; and
21 Psc, mag. 5.8, 1.65° NW of XZ Psc.

There are four fairly bright additional stars you may notice as you explore the field; I have not identified them, but here is a description of their locations:

One is located closely NNE of 29 Psc; **another** is about 2 or 3 times as far to WNW of 29 and NNE of 27 Psc. These could help the observer recognize the field of 27 and 29 Piscium.

Still another is a star of about mag. 8, NNW of 29 Psc, about 85 percent of the way toward the November 2025 portion of Neptune's path. **Finally, there is a faint star very closely south of Neptune's western stationary point,** where it ends retrograde in early December. It might be useful to know the names of these four stars in order to look up their magnitudes.

Additional charts that might also be helpful:

Sky & Telescope, September 2025, p. 49 (shows path of Neptune in 2025-26, but only a portion of Saturn's, which does not include Saturn positions for October).

In the following charts from In-the-sky.org, the Saturn charts for both 2025 and 2026 include the entire Turtle asterism, but the Neptune finder charts are plotted at a larger scale and show a much narrower field, and so do not show the entire Turtle asterism.

Links to charts showing motion of Saturn in 2025 and 2026:

https://in-the-sky.org/findercharts/08saturn_2025_1_cmyk.pdf

https://in-the-sky.org/findercharts/08saturn_2026_1_cmyk.pdf

Below are links to charts from In-the-sky.org showing the motion of Neptune in 2025 and 2026. The Neptune finder for 2025 includes the stars 20 and 29 Piscium of the Turtle; HIP 417, 4 Ceti, and 5 Ceti. (The latter two stars are actually in Pisces.) The finder chart for 2026 includes no stars of the Turtle asterism, but does include 5 Ceti and HIP 417. These stars, of mag. 6.2 and 6.3, are the brightest stars on the Neptune 2026 finder chart! So, you can see that the chart is of limited use for star hopping to the planet, without referring to a wider-angle chart. Sky & Telescope's *Pocket Sky Atlas* has excellent star charts, with stars plotted down to mag. 7.6.

https://in-the-sky.org/findercharts/10neptune_2025_1_cmyk.pdf

https://in-the-sky.org/findercharts/10neptune_2026_1_cmyk.pdf

Neptune and Saturn move retrograde in celestial longitude (toward WSW, mostly nearly parallel to the ecliptic) on the following dates:

Neptune retrogrades 2.8° from July 4, 2025 until December 9, 2025;
Saturn retrogrades 6.8° from July 13, 2025 until November 27, 2025.

We hope you will locate a user-friendly finder chart for easily locating Neptune with binoculars or finder scope by star hopping, using Saturn and stars of the Turtle asterism as starting points. We are hoping to put finder charts for Uranus and Neptune online on the *Sky Calendar Extra Content Page* at https://abramsplanetarium.org/msta/

Until then, check out on the same web page the monthly evening and morning mid-twilight charts showing changing visibility of the naked-eye planets and bright stars through the end of 2026.