



Saturn's Rings (Almost) Disappear

It takes Saturn roughly 30 years to orbit the Sun, and for much of that time, the planet's rings are clearly visible. However, every 15 years or so, when the Earth crosses Saturn's orbital plane, the rings appear edge-on to us, and for a brief time they disappear.

The ring plane crossing itself actually occurred on March 23rd, but the planet appeared too close to the Sun in the sky at that time. Thanks to the Earth's orbital inclination, the gap has been closing again, and on November 23rd, we'll get the next best thing - the rings won't quite be edge-on, but they'll appear so narrow that they'll all but disappear, with only larger amateur scopes being able to detect them.

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OUR NEAREST NEIGHBORS

Mercury appears in both the evening and morning sky this month. It's briefly visible in the evening sky until the 10th at about 15 minutes after sunset, very low towards the west-southwest. If you have binoculars, try looking for faint **Mars**, which appears five degrees to Mercury's right. **Saturn & Neptune** remain visible for much of the night, separated by four degrees, with the waxing gibbous Moon appearing to the right of Saturn on the 1st and 29th. **Uranus** is at opposition on the 21st (see below) while **Jupiter** is observable after midnight, close to Castor and Pollux in Gemini. A waning gibbous Moon appears between Pollux and Jupiter in the early hours of the 10th. **Venus** is low over the east-southeastern horizon at about 30 minutes before dawn at the start of the month. Spica, the brightest star in Virgo, appears to its right at that time, and a thin crescent Moon to its upper right on the 18th. Step outside at around 15 minutes before sunrise on the 24th and 25th, and you might also see dim Mercury, just 1.5 degrees to the left of Venus. Lastly, there's a Full Beaver **Moon** in Aries on the 5th, and the Moon turns new on the 20th.

Uranus at Opposition: Uranus reaches opposition on the 21st and is at its best for the year. 10x50 binoculars will show the planet as a starlike point, within the same field of view as the Pleiades star cluster. A telescope and a magnification of ~100x will show the planet as a tiny, aquamarine disc.

The Leonid Meteor Shower: Step outside on the evening of the 16th or the early hours of the 17th, and you might see a shooting star or two. You could see up to 15 meteors an hour under ideal conditions - but the waning crescent Moon won't be causing any interference.

Messier 33 - The Triangulum Galaxy: While being a little tricky for visual observers, M33 is a treat for astrophotographers. Through binoculars, it appears as a faint, oval patch of light, but you'll need a large telescope to see anything of its spiral arms.

The Double Cluster: The Double Cluster can be glimpsed with the naked eye under dark skies and provides an attractive view through binoculars. Telescopically, you'll need a magnification of around 70x or less to fit them both within the same field of view.

The Leonid Meteor Shower



Source: Luo Hongyang

STELLAR CONCEPTS

Retrograde & Prograde Motion: As confusing as it sounds, sometimes a planet will appear to move backwards through the sky. This is due to the orbital motions of the Earth and planets; a planet appears to have backwards (retrograde) motion across the sky as it passes, or is passed by, the Earth. Mercury will be retrograde for about 3 weeks, Venus for about 6 weeks, and the outer planets will each be retrograde for several months at a time. When the planet is moving normally (ie, forwards) across the sky, this is called prograde motion.