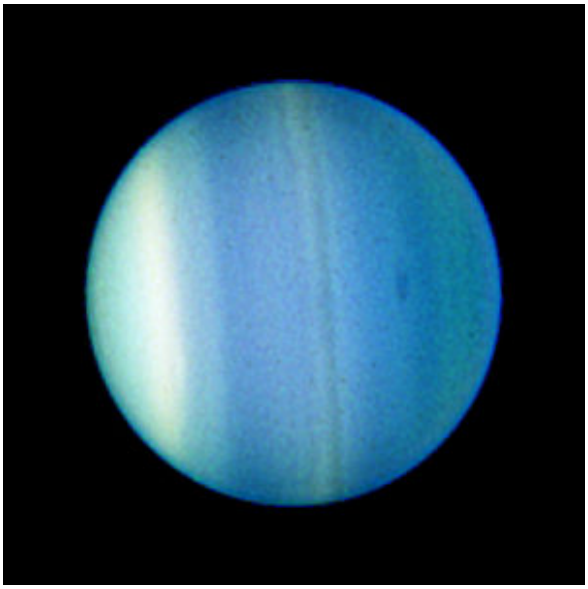
Star Guide: Uranus, a naked eye planet

By Tony Berendsen

In the beginning there were five planets. Our ancestors watched them for millennia knowing they differed from the stationary stars in the heavens; they wandered. They were given names and mythologies to share from generation to generation and ruled the night sky as gods. Then a man with a telescope discovered another one in 1781.

Uranus had been in the night sky all along, but no one noticed until Sir William Herschel, scanning the area of Taurus with his 6.2-inch reflecting telescope for double stars, ran across a fuzzy looking object. He first thought it might be a comet, but then later he was convinced it was a planet. The planet became the sixth planet known to exist in the solar system and was eventually named Uranus, the father of Saturn. And it was bright enough to be seen with the naked eye, but just went unnoticed.

Celestial objects are rated by a brightness system. The star Vega is the standard rated at 0.0 magnitude. Objects brighter than Vega have lower numbers, and dimmer objects have higher numbers. As an example, the brightest object in the sky is the Sun at -26.74 mag. and Neptune the dimmest planet at 8.0 mag. The dimmest objects we can see with the naked eye are about 6.0 mag.



Uranus was overlooked for years, but is visible with the naked eye. Photo/NASA/Hubble

The brightness of Uranus ranges slightly depending on how close it is to the Earth, and is brightest when the Earth passes between it and the sun during opposition, but even at its brightest it’s barely visible to the naked eye observer. Currently, the planet is about 5.7 magnitude in the constellation Pisces. Uranus wasn’t noticed until telescopes were used to study the starry sky because it was so dim, and moved very slowly amongst the stars.

Uranus is the next planet out beyond Saturn and the third largest planet in the solar system. It wanders amongst the night sky repeating its path every 84 years as it orbits around the sun. Comprised of water, helium, hydrogen, ammonia, and methane, its an ice giant just slightly larger than its neighbor Neptune. Inside Uranus the pressures are extreme, possibly creating a diamond mantle surrounding a small rocky core. Also, Uranus spins on its side relative to the plane of the Solar System, and sports a very defuse ring.

Even knowing the exact position of Uranus in the night sky you would need very keen eyesight and extremely dark skies to spot

it with the naked eye. Complicating the task, darker skies reveal more stars making it very difficult to identify dim Uranus from the multitude.

A computerized telescope is a great way to see Uranus. Even a modest sized scope will show the disk of the planet and reveal its bluish color, but there is a fun and somewhat challenging way to see Uranus. If you have a pair of binoculars, some patience, and a place away from bright lights give a try finding the planet with a little help from an astronomy app.

Load up the astronomy app **Sky Safari** on your pad or smart phone. Set the magnitude limit of the app to 8.0 and the time to 11pm. Find the planet Uranus on your smart device screen, zoom into the area around planet and notice there is a line of three stars just below (south) the planet, all of them about 6.0 to 8.0 mag., and at the top of the line the planet Uranus.

Then go outside to start hunting. Use the constellations Aries and Pieces to guide you to the correct part of the sky and use the star patterns shown in Sky Safari to guide you to the little line of dim stars with Uranus at the top. By the way, this method of finding an object in the night sky is called “Star Hopping”. It’s a method amateur astronomers use to search for celestial objects.

So happy planet hunting the naked eye planet Uranus. And while you are out underneath the stars take some time to explore the rest of the sky. There is a lot to see, even with binoculars.

Tony Berendsen runs Tahoe Star Tours. He may be reached at 775. 232.0844 or tony@tahoestartours.com.