

## SATURN STATIONARY IN THE SKY

On August 13, 2016, at 18 hours Universal Time the planet Saturn was stationary in the sky.

What does it mean? It does not mean that Saturn stopped moving in space. In space, nothing ever stops moving. The “stationary point” is an Earth-centred illusion.

Like all the stars and planets in the sky, Saturn (if visible) normally moves from where it is in the evening, westwards across our night sky. This progression of the heavenly bodies is due purely to Earth’s 24 hour spin on its axis.

But planets do also each have an individual movement, they seem to wander amongst the stars as they circle around the Sun on their individual orbits. **The word "planet" derives from the Ancient Greek *aster planetes*, which means "wandering star". All other stars appear fixed permanently to the heavenly sphere.**

But these wandering stars not only wander at their own pace against the background of the fixed stars, they can slow down, stop and even go backwards at times. It was a great puzzle to the old Greek and their Geo-centric (Earth-centred) perfect universe. They eventually came up with a perfect solution: add a small circle (an epicycle) to the path of the orbit of the planet (make it a sort of figure eight) and everything comes out right. It worked our so well the **Ptolemaic system** (as it became known) lasted for over a thousand years.

In fact it worked so well, that when in 1543 **Nicholas Copernicus** came up with the idea of a helio (Sun) centred Solar System, no one took him serious. Mathematically the Ptolemaic system was so much better. Not until 40 years later, when **Johannes Kepler** suddenly realised that for the figures to come out right, planetary orbits must be ellipses, not perfect circles, things started to fall into place. After that, the rest is history!

So, how does all that make Saturn stop and go backwards in the sky? Look at the drawing above: S is the Sun, T is the Earth, P is a Planet and A is the starry Sky above. T having a smaller orbit than P is overtaking P and in the process the image of P will appear to become stationary, go backwards (called retrograde) against the distant fixed stars, stop again and then carry on normal again.

It means that – on August 13, 2016 – Saturn was poised in one spot relative to the background stars. It’s in front of the constellation Ophiuchus, momentarily motionless relative to the first-magnitude star Antares in the bordering constellation Scorpius. Since March Saturn has been moving retrograde in the constellation Ophiuchus. Now Saturn will reverse course and begin moving prograde (normal) in front of the stars.

This apparent movement of Saturn, first to the west and then to the east and then west again, is actually due to Earth’s motion in orbit around the sun. We move faster than Saturn – on an inner track around the sun – and that’s why Saturn appears to hang motionless at times, prior to changing its apparent direction of motion on our sky’s dome. It’s as if we are in a fast car, moving along a highway. From our perspective, slower cars on a different lane can, for a time, appear to move backwards against the distant landscape.

Saturn, the sixth planet outward from the sun, is the most distant world you can easily see with the unaided eye. As a result, it moves rather slowly through the constellations of the zodiac. Saturn will finally leave Ophiuchus to move into the constellation Sagittarius in late February 2017

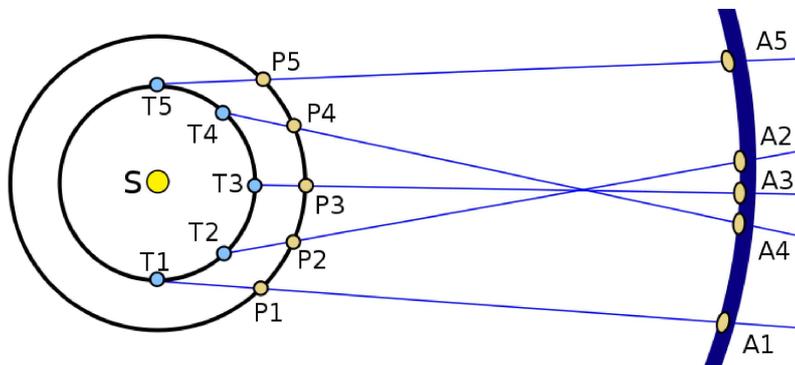


Diagram via Wikipedia. The planets move in a counterclockwise direction as viewed from the north side of the solar system. Relative to the backdrop stars, the faster-moving inner planet sees the slower-moving outer planet moving in retrograde from A2 to A4..

