Detection of exoplanets with extreme climates and extremely unusual orbits

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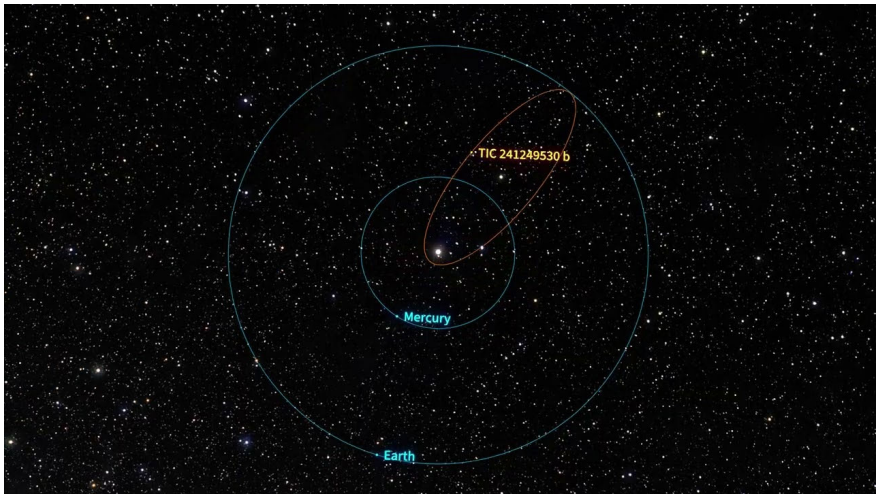
Exoplanet are planets located outside the Solar System. Essentially, exoplanets belong to a planetary system but follow the orbit of a star, black hole, remnant or another planet instead of following the orbit of the Sun. Therefore, it contains countless strange features and characteristics that are considered valuable knowledge stores for astronomy researchers.

Exoplanets come in all sorts of shapes and sizes, and can be strange in many different ways. A recently announced discovery discovered an exoplanet named TIC 241249530 b, possessing the most extreme orbit recorded to date in the history of astronomical research.

In fact, most planets do not have perfectly circular orbits around their host star - including those in our solar system - but are elliptical, slightly stretched on both sides. This degree of stretching is called eccentricity, measured on a scale of 0 to 1, with 0 being perfectly round and 1 being extremely flat. For example, Pluto has a very elongated orbit compared to other planets in the solar system, with an orbital eccentricity of 0.25. Meanwhile, the Earth has an orbital eccentricity of only 0.02.

However, scientists discovered that TIC 241249530 b has an almost unprecedented orbital eccentricity of 0.94. Assuming this planet is also in our solar system, it will theoretically come 10 times closer to the sun than Mercury and will also come close to Earth's orbit. In terms of surface temperature, such a transit also means there will be a shift between warm summer days and hot enough to melt titanium. This extreme temperature change has scientists curious about the impact it has on the planet's atmosphere.



In addition, another aspect that is also of interest is how the planet's orbit develops over time. Scientists predict that tidal forces coming very close to the host star will cause the planet's orbit to become more circular.

In essence, TIC 241249530 b is a type of planet called a hot Jupiter, about the same size as Jupiter but much closer to its host stars, and often found outside our solar system . Astronomers aren't sure how these planets got so close to their stars; for example, they could have formed farther away and moved closer over time.

Modern Space Telescope systems like NASA's James Webb are sensitive enough to probe changes in the atmosphere of this newly discovered exoplanet, as it undergoes rapid heating. Therefore, there is still much to learn and research in the future.