

Discovery of Super Earth orbiting Red Dwarf

June 26, 2020

In research led by the University of Gottingen, the RedDots team of astronomers has detected a system of super-Earth planets orbiting the nearby star **Gliese 887**, the **brightest red dwarf star in the sky**.

What are super Earth planets?

Super-Earths are planets which have a **mass higher than the Earth's but substantially below those of our local ice giants**, Uranus and Neptune. The newly discovered super-Earths lie close to the red dwarf's habitable zone, where water can exist in liquid form, and could be rocky worlds.

What is Red Dwarf?

Stars that burn hydrogen through thermonuclear fusion are classified into seven spectral types on the basis of their surface temperature. Red dwarfs are the **coolest main-sequence stars**, with a spectral type of M and a surface temperature of about 2,000–3,500 [K](#). Red dwarfs are also the **dimmest stars**, with luminosities between about 0.0001 and 0.1 times that of the Sun.

The RedDots team of astronomers monitored the red dwarf, using the **HARPS spectrograph at the European Southern Observatory in Chile**. They used a technique known as Doppler wobble, which enables them to measure the tiny back and forth **wobbles of the star caused by the gravitational pull of the planets**.

The regular signals correspond to orbits of just 9.3 and 21.8 days, indicating two super-Earths-Gliese 887b and Gliese 887c, both larger than the Earth yet moving rapidly, much faster even than Mercury.

The **red dwarf has very few starspots**, unlike our Sun. If Gliese 887 was as active as our Sun, it is likely that a strong stellar wind would simply sweep away the planets' atmospheres. This means that the **newly discovered planets** may retain their atmospheres, or have thicker atmospheres than the Earth, and **potentially host life**.

These planets will provide the best possibilities for more detailed studies, including the search for life outside our solar system.