



Giant Planet Orbiting Red Dwarf Star

[Source: TOI](#)

Astronomers have discovered a **Saturn-sized gaseous planet** orbiting the [red dwarf star TOI-6894](#) beyond our solar system.

- The planet was studied primarily using data from **NASA's [Transiting Exoplanet Survey Satellite \(TESS\)](#)** and the **Very Large Telescope (VLT)** operated by the **European Southern Observatory in Chile**.
 - Planets beyond our solar system are called [exoplanets](#).
- It is the **smallest-known star** to host such a massive planet **challenging conventional theories of planetary formation**.
- It is located in the **Leo constellation**, is just **21% of our Sun's mass**, yet hosts a **Saturn-sized gas giant**—defying current models that suggest **small stars** typically form only **rocky planets** like Earth or Mars.
- **Red Dwarf: Red dwarfs** are the **smallest stars**, with masses between **7.5% and 50% of the Sun**.
 - They have **very low luminosity**, emitting just **0.01% to 10%** of the Sun's brightness, and **low surface temperatures** give them a **red or orange glow**.
 - Their **slow hydrogen burning** allows them to shine for **trillions of years**, far longer than the Sun's **10-billion-year lifespan**.
 - They are the most **common type of star** in the Milky Way galaxy. The **closest star to the Sun, Proxima Centauri**, is a red dwarf.

A comparison of star sizes

Red Dwarf

Lower limit:
0.08 solar
masses

Our Sun

1 solar mass

Blue-white Supergiant

150 solar masses

Red Giant

Very old stars that
evolve from stars of
<5 solar masses

Read More: [Binary Brown Dwarfs](#)

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