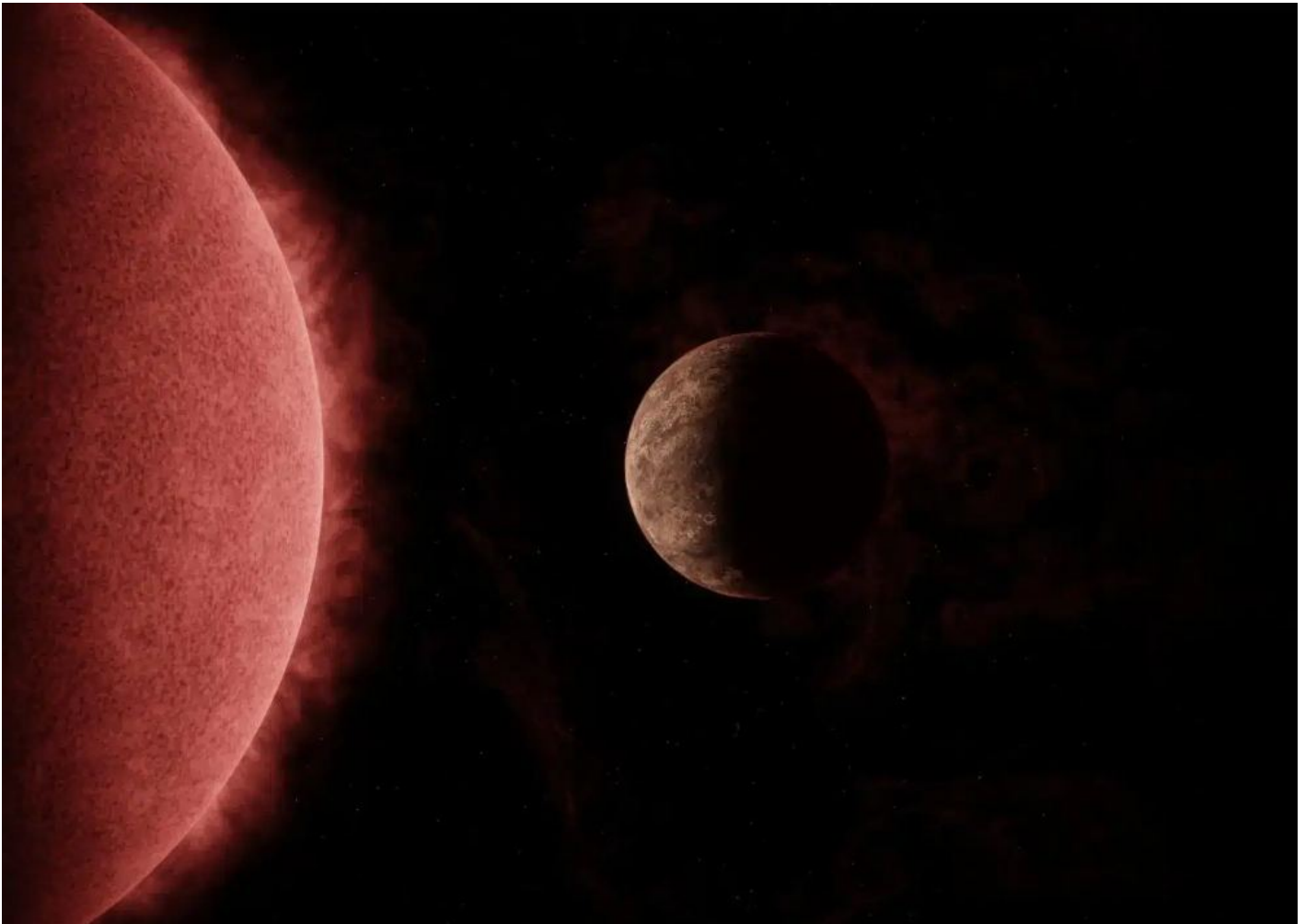


What is a SPECULOOS-3b?

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About SPECULOOS-3b

- It is an **Earth-size planet** orbiting an **ultracool red dwarf star**, **55 light-years** away from Earth.
- This **red dwarf**, though **similar in size to Jupiter**, **emits light 100 times dimmer** than the **sun** and has **half the temperature**.
- The planet is only the **second of its kind** to **be discovered around this type of star**.
- SPECULOOS-3b **receives high levels of radiation** from its sun, probably leaving the planet **without an atmosphere**. The planet receives almost 16 times more energy per second than Earth receives from the Sun.
- It takes around **17 hours to complete an orbit** of the star.
- The **planet** is thought to be **tidally locked**, so the same side, known as the dayside, always faces the star, like the Moon to Earth. The nightside would be locked in never-ending darkness.

- The discovery was **made by the team from the SPECULOOS (Search for Planets Eclipsing ULtra-cOOl Stars) project**, which is led by the University of Liège, in Belgium, in collaboration with the Universities of Birmingham, Cambridge, Bern, and the Massachusetts Institute of Technology, using the observatory located in the Atacama Desert of northern Chile.
 - The SPECULOOS project was established **to search for exoplanets orbiting ultra-cool dwarf stars** using a network of **robotic telescopes** based **around the world**.

What is a Red Dwarf Star?

- It is a type of **low-mass star** that is the most **common type of star** in the Milky Way galaxy.
 - These stars are **smaller and cooler than the Sun**, with surface temperatures that range from about 2,200 to 3,500 Kelvin.
 - They are also **much dimmer** than the Sun and **emit most** of their **light in the infrared** part of the spectrum.
 - Unlike the sun, red dwarfs have incredibly **long lifespans** due to their **slow consumption of nuclear fuel**, making them interesting targets for studying planetary evolution and habitability over extended periods.
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Q1: What is Tidal locking?

It is the phenomenon by which a body has the same rotational period as its orbital period around a partner. So, the Moon is tidally locked to the Earth because it rotates in exactly the same time as it takes to orbit the Earth. That is why we only see one side of the Moon.

Source: [Astronomers discover new Earth-sized world orbiting an ultra-cool star](#)

Source: <https://vajiramandravi.com/current-affairs/what-is-a-speculoos-3b/>

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