

Planet darker than charcoal discovered

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Scientists have discovered a 'pitch black' planet 470 light-years away that absorbs 99 per cent of light, making it one of the darkest planets ever found. The planet, named WASP-104b, was discovered by researchers from Keele University in the UK, who used NASA's Kepler telescope to show that it is 'darker than charcoal.'

"This is one of the darkest planets ever discovered – reflecting very little light from its host star," said Teo Mocnik from Keele's Astrophysics Group. "WASP-104b is interesting because it was not even seen. All planets reflect starlight from their host star. Some planets are highly reflective, such as Venus reflecting 70 per cent of the light, while some others reflect only 10 per cent."

"When analysing the highly precise photometric data from Kepler, we were surprised not to see reflected starlight from WASP-104b," said Mocnik, who led the research. The planet was discovered orbiting a yellow dwarf star some 470 light-years away from us in the constellation Leo, and is categorised as a 'hot Jupiter' planet.

Hot Jupiters are gas giant planets of a similar mass to Jupiter, but are located much closer to their host stars – making them very hot. WASP-104b is so close to its host star (at around 2.6 million miles) it takes just 1.76 days to complete its orbit. This proximity to its host star may be the reason the planet is so dark – as conditions are too hot for clouds (which are highly reflective) to form, researchers said.

The lack of light being reflected from the planet may also be attributed to the presence of alkali metals such as sodium and potassium in a 'hazy' atmosphere, which causes significant absorption of light in the visual wavelengths, they said. "Since WASP-104b is one of the least-reflective planets known to date, it will serve as a test bed for atmospheric models," said Mocnik.

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