

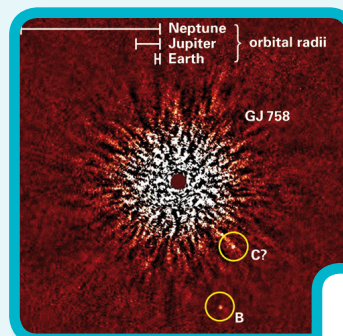
Exo-planets

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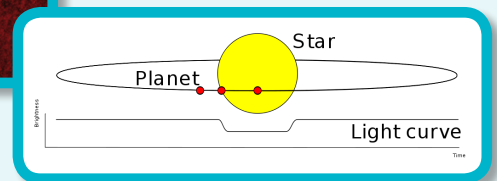
Fact sheet 1



An exo-planet or extra-solar planet is a planet orbiting a star other than our Sun.



'Direct imaging'



'Transit method'

Finding exo-planets isn't easy

- Sometimes planets can be seen going around stars, but only if they are big and not too close to their star. This is called the 'direct imaging' method.
- As a planet passes in front of its star, the star gets a bit dimmer. Astronomers can measure this change in light. This is called the 'transit method'.
- A star will wobble as a planet goes around it, because of the planet's gravity. Astronomers can measure this wobble. This is called the 'radial velocity' method.

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Fact sheet 2

Distances between stars and their planets are measured in Astronomical Units, or AU. The distance between the Sun and the Earth is 1AU.

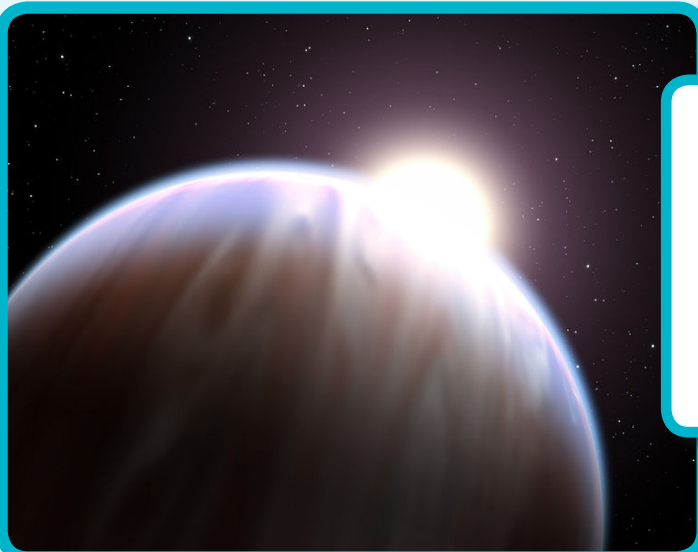
1AU

The 'Goldilocks Zone' or 'Habitable Zone' is the region around a star where there could be liquid water – not too hot and not too cold.

We can calculate where the habitable zone is using this equation:

$$\begin{aligned}\text{Inner edge} &= \sqrt{L} \times 0.7 \\ \text{Outer edge} &= \sqrt{L} \times 1.5\end{aligned}$$

L is the luminosity, or brightness, of the star compared to that of the Sun.



A 'Super-Earth' planet is one which has a mass between the mass of the Earth and the mass of Jupiter. This type of planet could be a rocky planet or it could be made of gas.