

GCSE Physics B (Twenty First Century Science)
J259/03 Depth in physics (Higher Tier)

Question Set 24

1 Kepler-445d is a planet orbiting a distant star in our galaxy. It was discovered in 2015.

Astronomers believe that Kepler-445d is similar to the Earth. However, it orbits a star that emits light with a longer principal wavelength than the Sun.

(a) State how the surface temperature of the star compares to the surface temperature of the Sun.

[1]

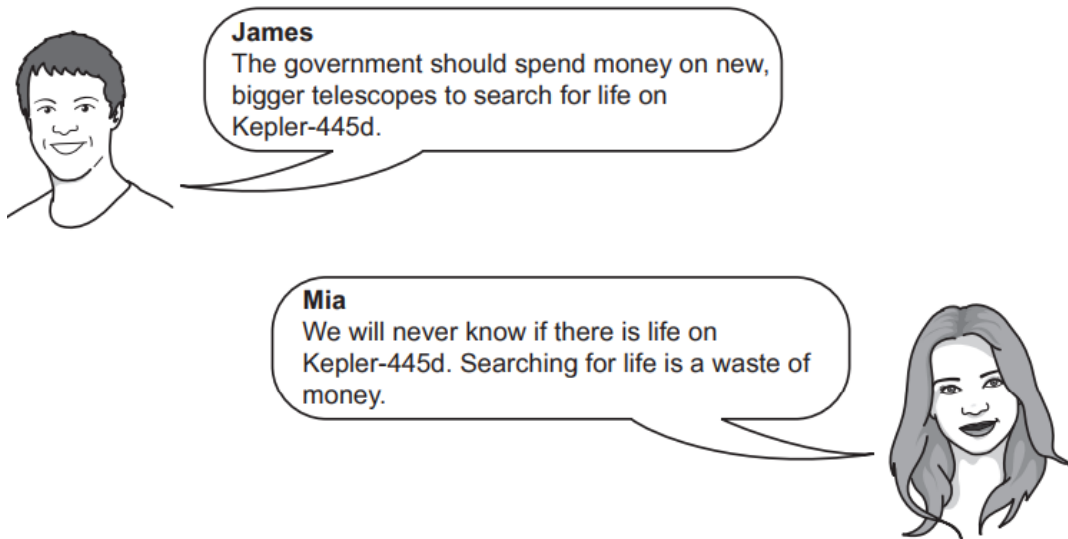
(b) The intensity of radiation emitted by the star is much lower than that emitted by the Sun.

However, the surface temperature of Kepler-445d is thought to be similar to the surface temperature of the Earth.

Give **two** possible reasons to explain how Kepler-445d could be at a similar temperature to Earth.

[2]

(c) James and Mia discuss whether scientists should look for life on Kepler-445d.



Who do you agree with? Explain why.

James

Mia

[2]

Total Marks for Question Set 24: 5

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