

# Mystery Planet Challenge

The year is 2012. Astronomers have been observing an alien world orbiting a distant star. They have brought you their data, hoping that you can decipher what the evidence means.

What is your mystery planet like? Be forewarned: The press will want to know how you came to your conclusions, so be prepared to support your conclusions with evidence.

Remember: There may be many possible types of planets that fit the evidence you've been given. Describe one that fits the evidence, but feel free to indicate when there might be other possibilities.

Good luck!

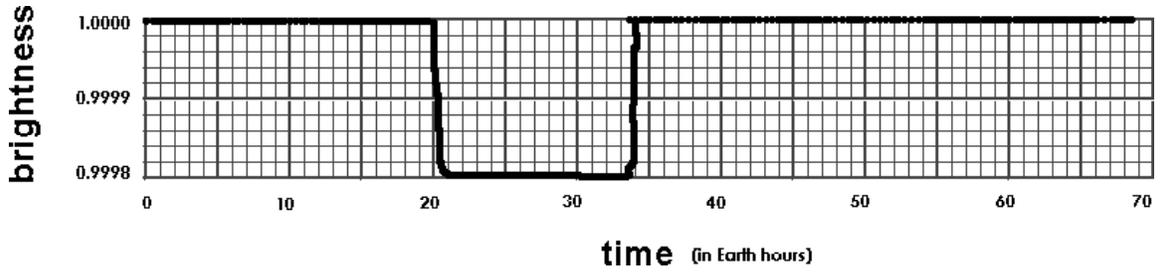
Information you may need:

1. Astronomers have determined that the planet is orbiting a star that is very similar to our own Sun (same size, temperature, etc.).
2. Assume that the temperature curve corresponds to the surface of the planet.
3. Assume that there are no clouds. Clouds would complicate everything!

# Mystery Planet A

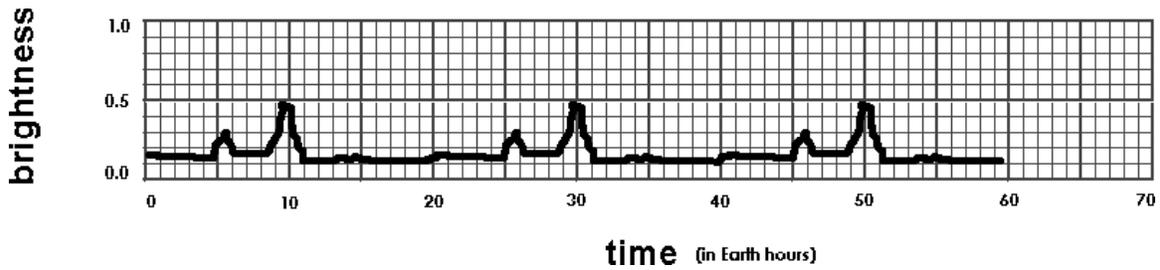
Graph 1.

This graph shows the brightness of the visible light from the *star*, at different times.



Graph 2.

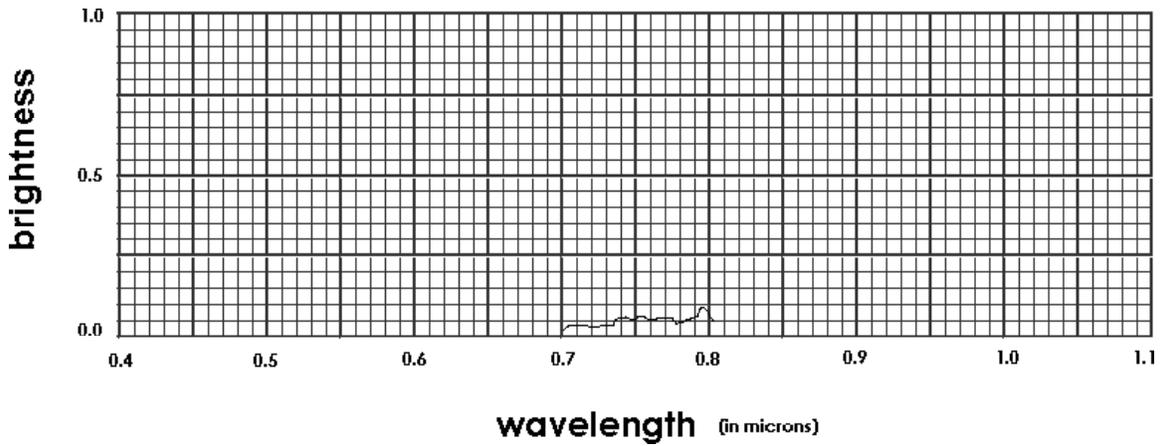
This graph shows the brightness of the visible light from the *planet*, at different times.



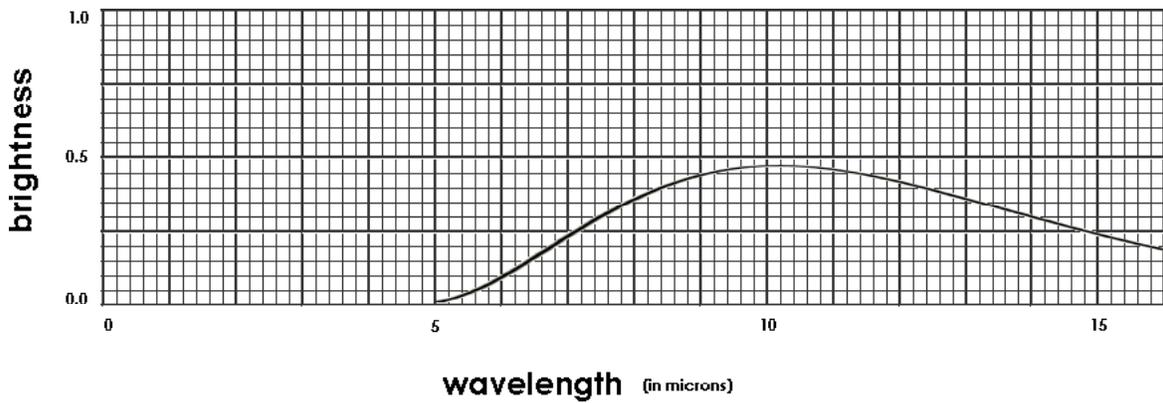
# Mystery Planet A

These graphs show the brightness of the planet, at different wavelengths of light.

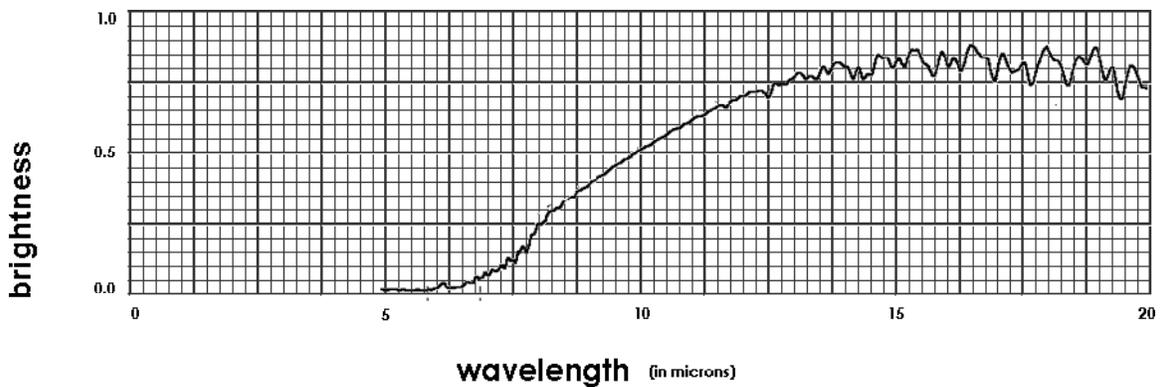
Graph 3:



Graph 4:



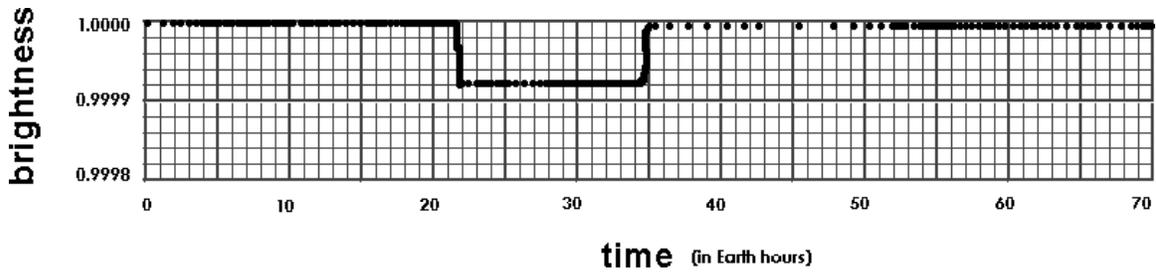
Graph 5:



# Mystery Planet B

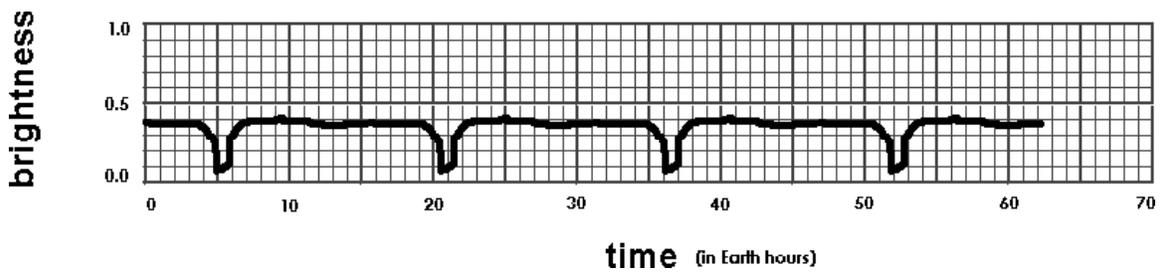
Graph 1.

This graph shows the brightness of the visible light from the *star*, at different times.



Graph 2.

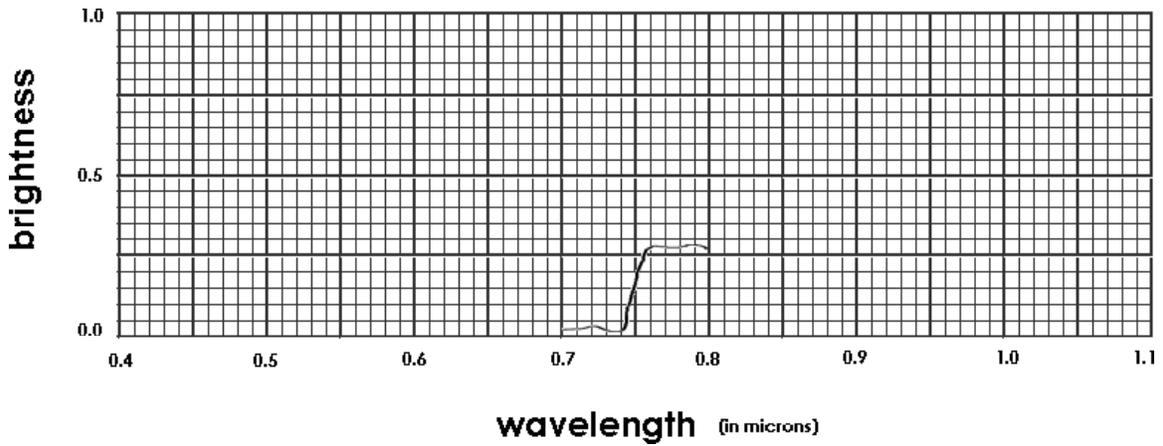
This graph shows the brightness of the visible light from the *planet*, at different times.



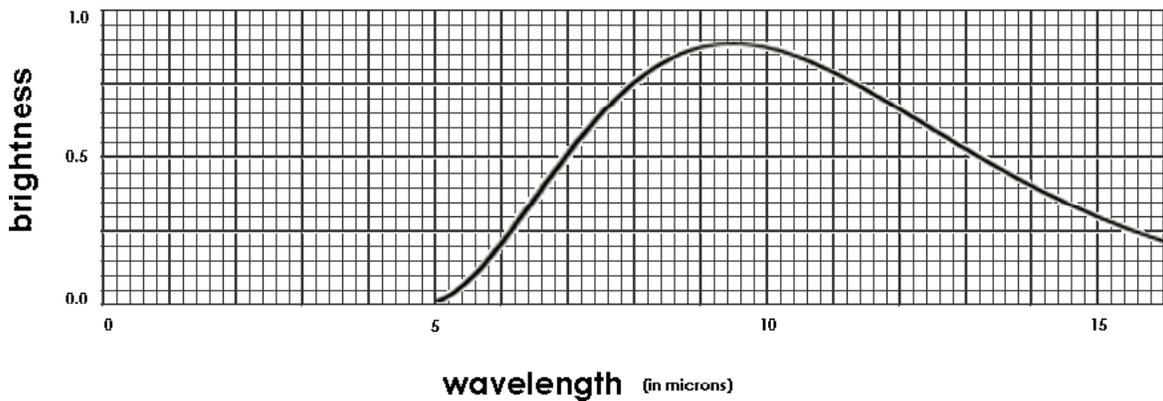
# Mystery Planet B

These graphs show the brightness of the planet, at different wavelengths of light.

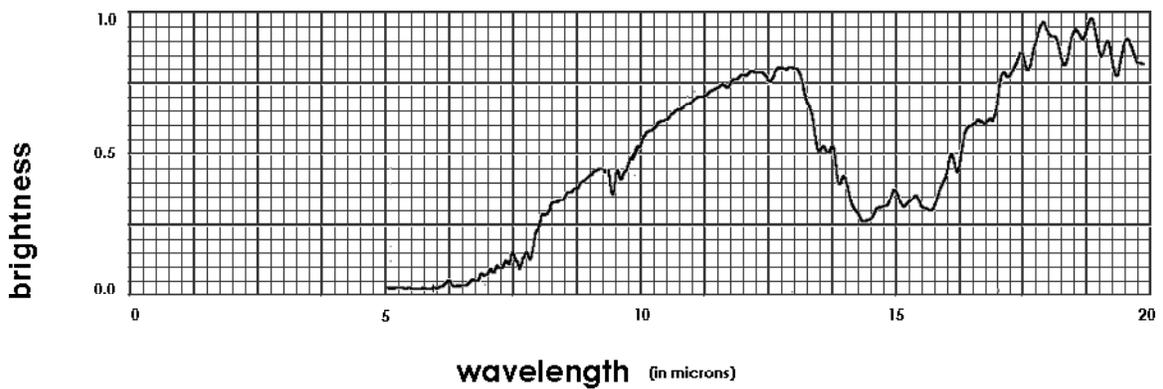
Graph 3:



Graph 4:



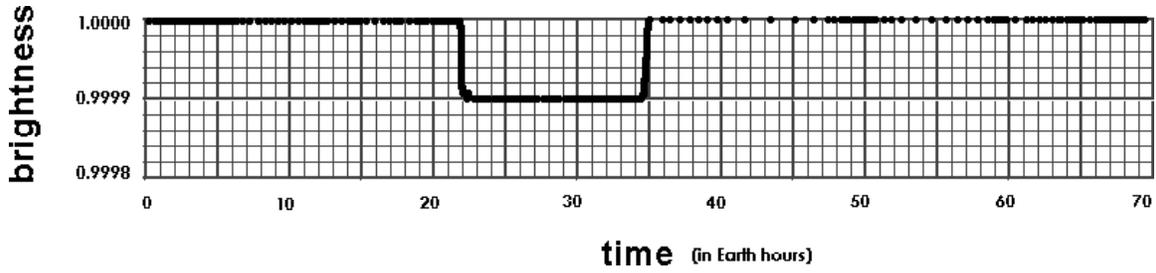
Graph 5:



# Mystery Planet C

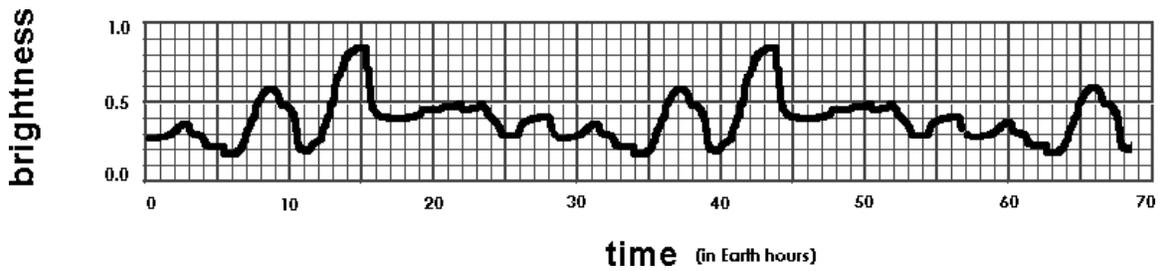
Graph 1.

This graph shows the brightness of the visible light from the *star*, at different times.



Graph 2.

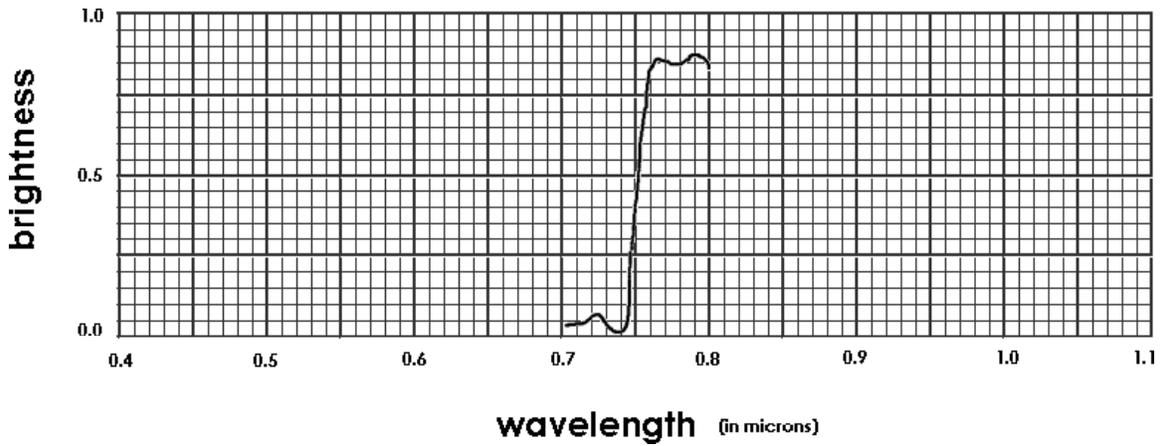
This graph shows the brightness of the visible light from the *planet*, at different times.



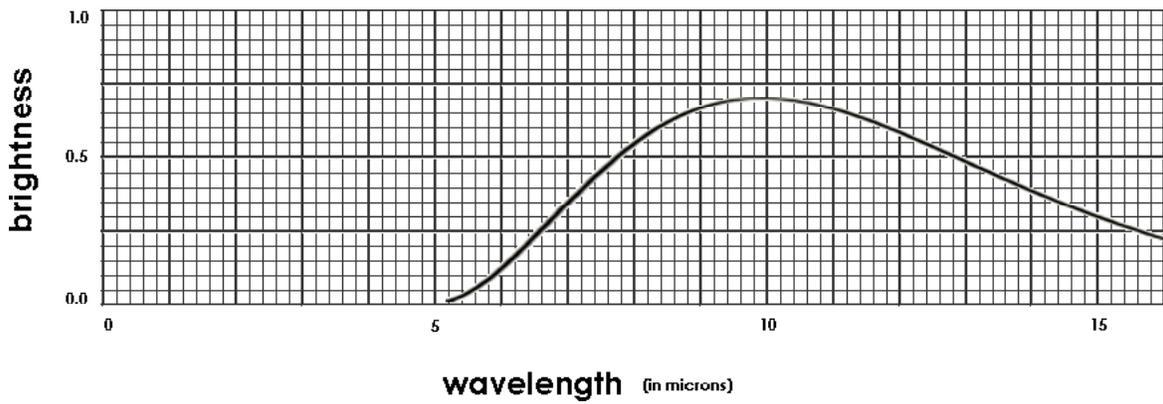
# Mystery Planet C

These graphs show the brightness of the *planet*, at different wavelengths of light.

Graph 3:



Graph 4:



Graph 5:

