

1) The graph above shows a radial velocity curve of a star.

a) How many planets are orbiting this star?

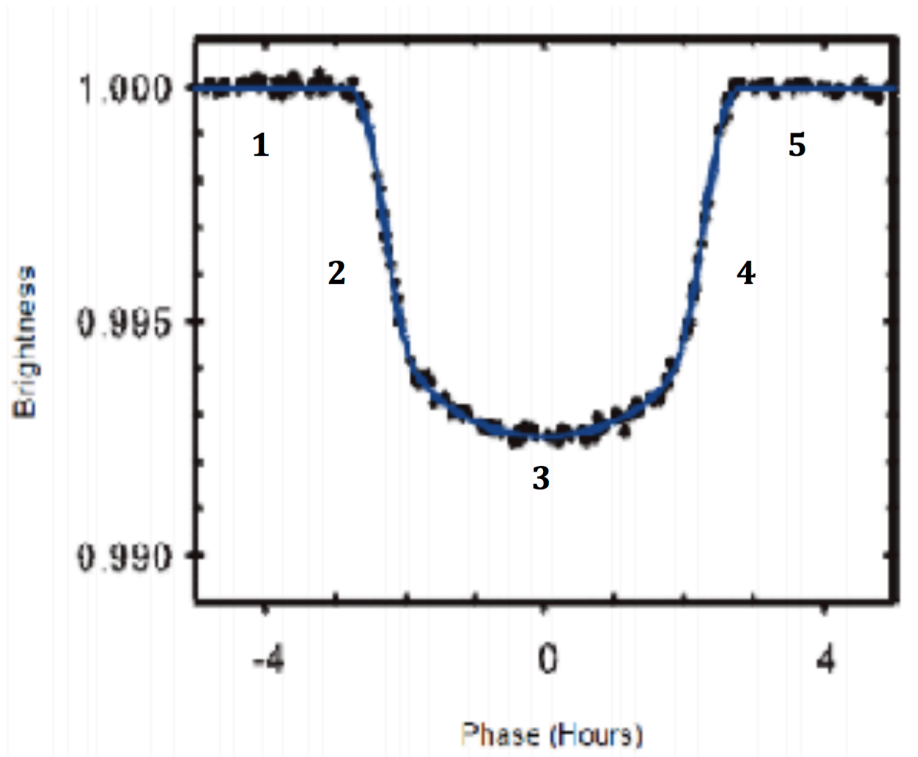
b) What is the period of the planet(s)?

c) What is the distance of the planet from the star, assume  $M_{\text{star}} = 2M_{\text{sun}}$ ?

d) What is the speed of the planet's orbit?

e) What is the speed of the star's orbit?

f) If  $V_{\text{star}}/V_{\text{planet}} = M_{\text{planet}}/M_{\text{star}}$  what is  $M_{\text{planet}}$ ?



2) here we see a transit curve of a planet orbiting a star.

a) Draw a picture to show what is happening at each numbered part of the graph.

b) if the brightness change is proportional to  $(R_{\text{planet}}/R_{\text{star}})^2$  and  $R_{\text{star}}$  is roughly  $10^6 \text{ km}$  what is  $R_{\text{planet}}$ ?