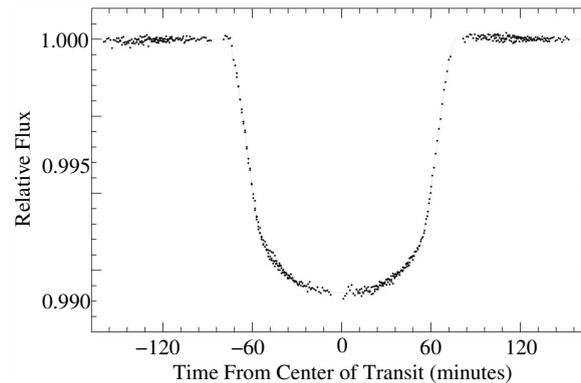




## Step 2: Volume

In addition to the radial velocity measurements made above, you also observe the planet making transits across the star. These transits last for 2.5 hours and, at the point of greatest eclipse, block out 1% of the light from the star.



- Assuming that the *radius of the star* is the same as that of the Sun ( $7 \times 10^8$  m), what is the *radius of the planet*?
- What is the volume of the planet?

## Step 3: Density

- What is the density of the planet?
- How does that density compare to that of water ( $1000 \text{ kg/m}^3$ )?
- What does this density tell you about the composition of the planet?

**BONUS:** How could you have figured out the star's radius if that information were omitted from the problem?

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