

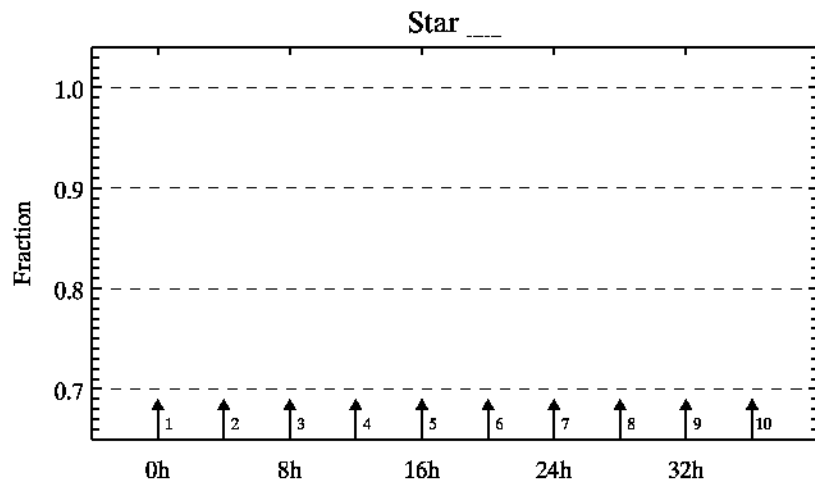
# TRANSITING PLANET EXPERIMENT

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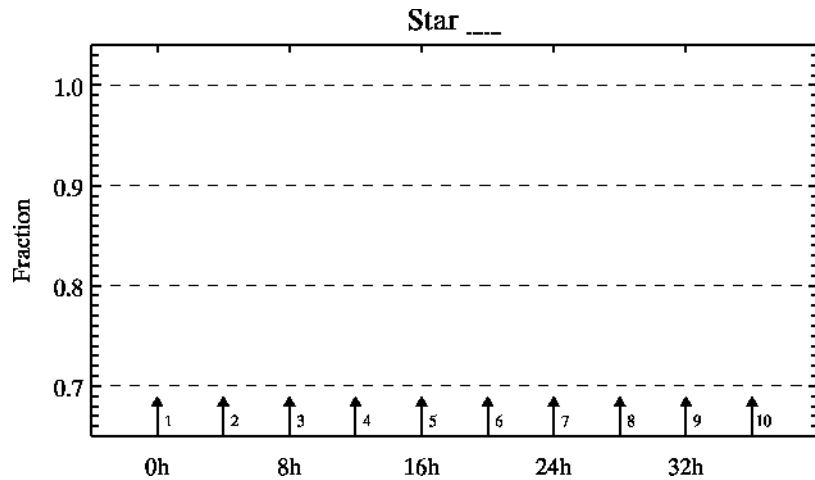
For each of the five observations you take in class:

- 1) Write the light meter value of the un-obstructed stars in the “Value” column in for first row.
- 2) Record data at each time step in the units of the light meter under “Value” (each time step is separated by 4 hours).
- 3) Calculate the fraction of the total light of the star seen at each time step and record the value in the “Fraction” column.
- 4) Plot the “Fraction” versus time on the graph provided.
- 5) Answer the questions at the end of this worksheet.

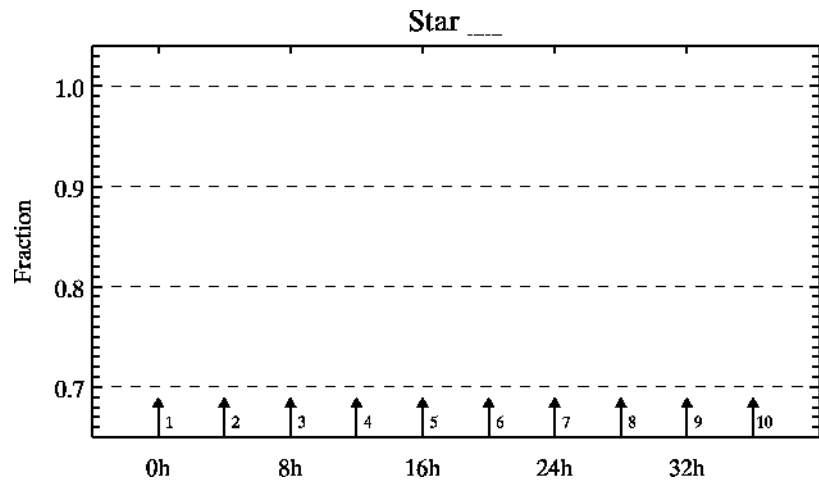
Obs. #	Value	Fraction
Star		1.00
1 .		
2 .		
3 .		
4 .		
5 .		
6 .		
7 .		
8 .		
9 .		
1 0 .		



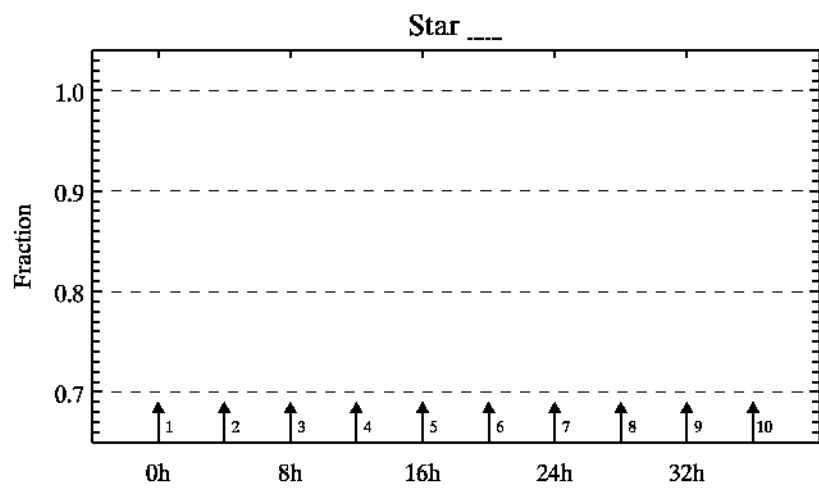
Obs. #	Value	Fraction
Star		1.00
1 .		
2 .		
3 .		
4 .		
5 .		
6 .		
7 .		
8 .		
9 .		
1 0 .		



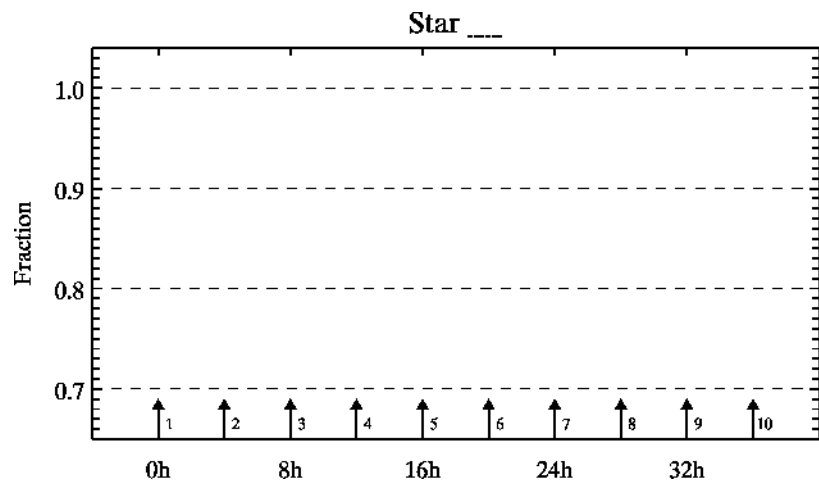
Obs. #	Value	Fraction
Star		1.00
1 .		
2 .		
3 .		
4 .		
5 .		
6 .		
7 .		
8 .		
9 .		
1 0 .		



Obs. #	Value	Fraction
Star		1.00
1 .		
2 .		
3 .		
4 .		
5 .		
6 .		
7 .		
8 .		
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1 0 .		



Obs. #	Value	Fraction
Star		1.00
1 .		
2 .		
3 .		
4 .		
5 .		
6 .		
7 .		
8 .		
9 .		
1 0 .		



Questions:

**1. Draw a planet orbiting a star - what orientation is required to produce planetary transits?  
How common do you think that orientation is?**

**2. What can you learn about the physical properties of the planets orbiting the stars based on the data you took (be quantitative)?**

**3. What is the difference between the planets around Star A and Star C (be as quantitative as possible)?**

**4. What are the differences between the planets orbiting stars C and D?**

**5. How can you explain the results from star B (there are a variety of reasons that we may not see a signal)?**

**6. The Earth's radius is about 100 times smaller than the Sun. How sensitive would our light meter have to be to detect the Earth in transit?**