PARALLAX
A couple of examples

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Syllabus Requirement

understand that distance to stars can be measured using the relative brightness of stars or parallax (qualitative idea only)

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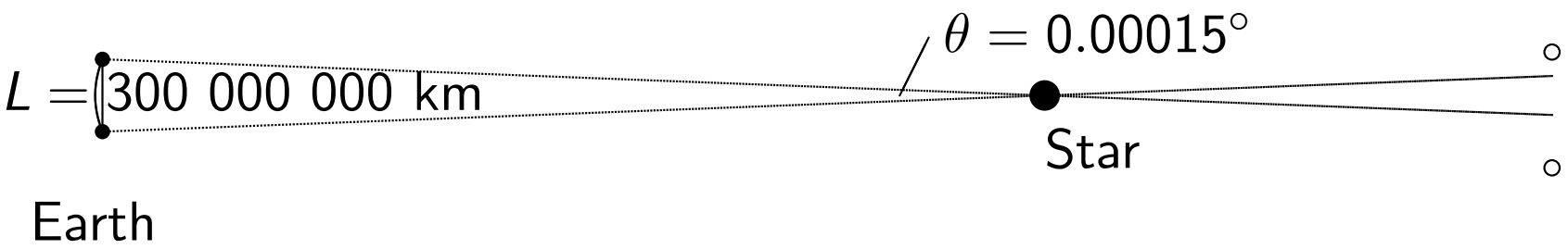
Problem 1

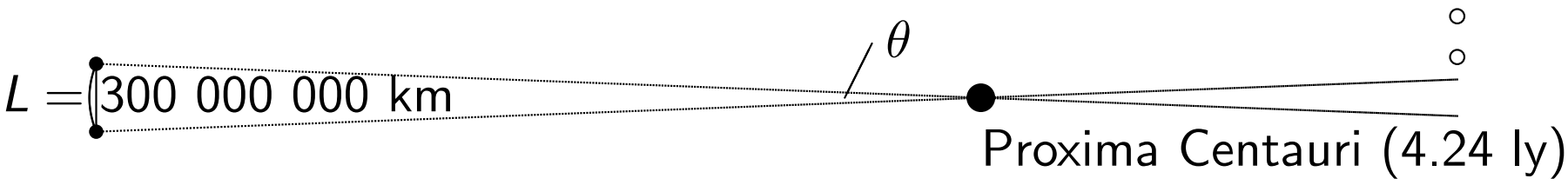
The baseline used in measuring parallaxes of nearby stars is the diameter of the earth's orbit ($2\ \mathrm{AU} = 300\ 000\ 000$ km).
If the parallax angle measured is $0.00015°$, how far away is the star?



$$R = \frac{360°}{\theta°}\frac{L}{2\pi}$$

Problem 2

Proxima Centauri is the nearest star to us (after the Sun). It is 4.24 light years away.
What would we measure its parallax angle to be?



$$\theta^\circ = 360^\circ \times \frac{L}{2\pi R}$$

A light year is the distance which light, moving at 300 000 km/s, covers in a year. The sun is eight light minutes away, Pluto about 5 light hours.