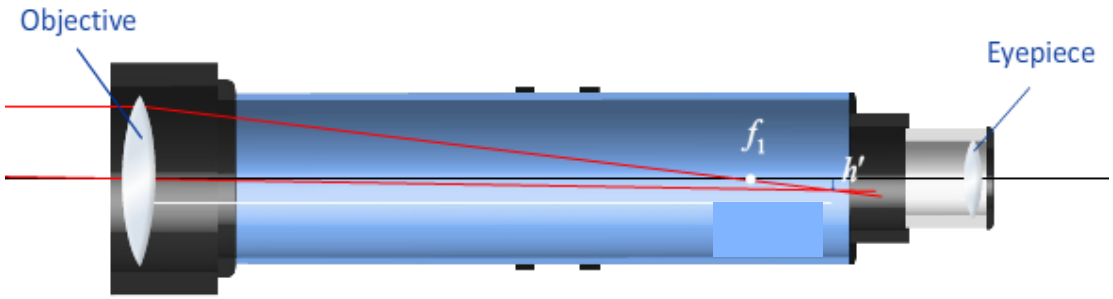
Angular Magnification: Telescope

How does this apply to things far away? E.g. the moon



- Your eye can focus rays that are parallel or slightly diverging
  - Assume for simplicity that the rays from the eyepiece are parallel

The math:

First, what is the approximate image distance for the objective, s_1'?

A) $s_1' \approx s_1$

B) $s_1' \approx f_1$

C) $s_1' = \dfrac{f_1 s_1}{s_1 - f_1}$ (no approximation)