Topic 2

Stronger eyes and better numbers

https://www.youtube.com/watch?v=lMtXfwk7PXg

Telescopes

-a telescope is a device that magnifies objects at great distances

-a simple telescope uses two lenses in order to operate:

1. Objective lens
   - On the end of a telescope

2. Ocular lens
   - The eyepiece that you view the object through

-to build a more powerful telescope you need to increase its RESOLVING POWER

-this kind of power is the fineness of detail the telescope can produce of an object

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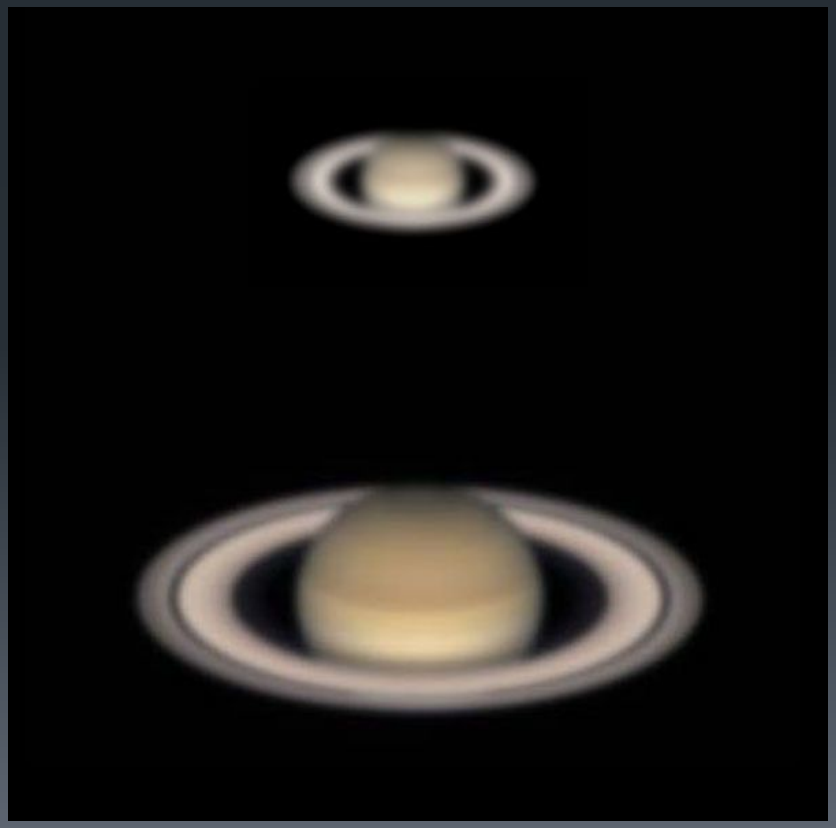
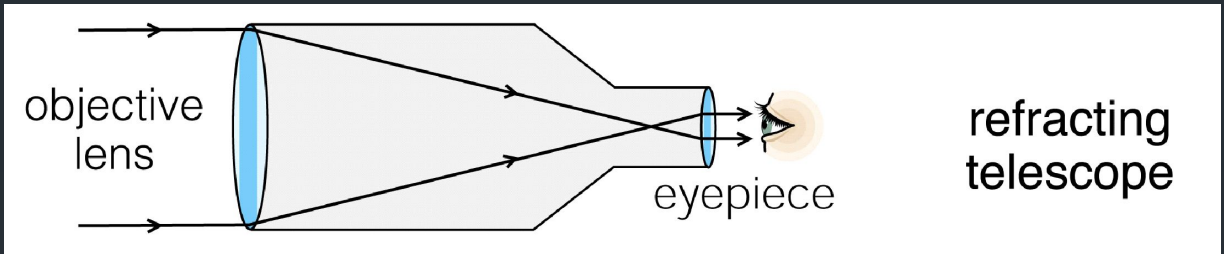
- -What results in a stronger resolving power? Why? A larger diameter objective lens increases telescope resolving power.

- Why? It produces finer detailed objects.



Refracting telescope

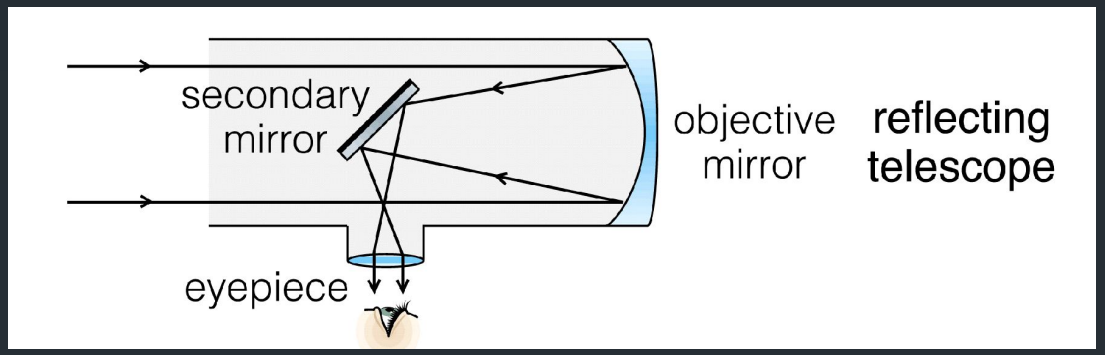
- Have a lens for their objectives



https://www.youtube.com/watch?v=750YGJ2JXkA (1 min-1:30)

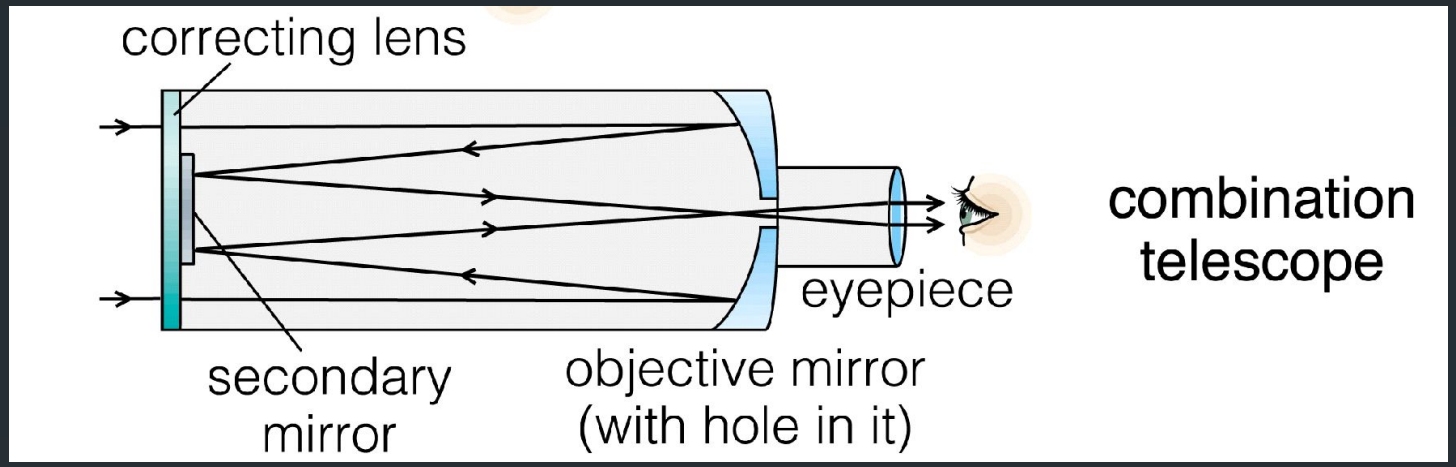
Reflecting telescope

- Have a mirror as objective lens.



https://www.youtube.com/watch?v=750YGJ2JXkA (1:45)

Combination telescope



- Have both a lens and an objective mirror

https://www.youtube.com/watch?v=750YGJ2JXkA (3 min)

- In order to calculate out the resolving power of the telescope we can use the following formula:

$$\textbf{Magnification} = \frac{\text{objective focal length}}{\text{eyepiece focal length}}$$

Example) What is the magnification of a telescope that has an objective focal length of 60 cm and a eyepiece focal length of 2 cm? Show you work.

https://www.youtube.com/watch?v=WvLspPgC1EU

Galileo

- https://www.youtube.com/watch?v=qGNgrMNklrc
- (6-18 minutes)