OPTICS TRADE

Catadioptric Telescopes

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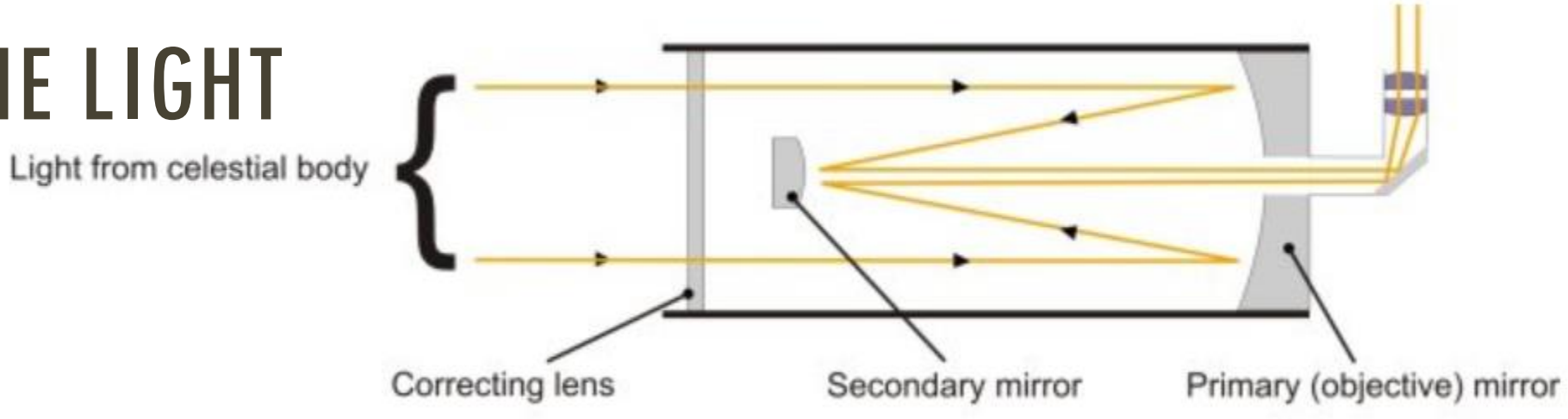
GENERAL PROPERTIES

- Combination of **two systems**:
  - Forming image with the use of a **mirror** (**catoptric** system) and **lens** (**dioptric** system)
- The main elements of catadioptric telescopes are:
  - a short **optical** tube,
  - a **primary** mirror,
  - a **secondary** mirror and
  - a glass **corrector**.

PATH OF THE LIGHT



- The optical tube → **sealed** and **small**
- The light enters the optical tube and passes through the **glass corrector** → primary function of the glass corrector is to limit the **spherical** aberration
- Light rays travel to the primary mirror
- The beams are collected and bounced towards the secondary mirror
- From here, the light reflects through a hole in the primary mirror to an **eyepiece**.

DESIGN

The most popular designs are:

- **Schmidt-Cassegrain**
- **Maksutov-Cassegrain**

Both telescopes are very **popular** and have a pretty similar design, but there are some differences

- Main difference is in **corrector plate** and **secondary mirror**

- Maksutov-Cassegrain uses a **thicker** corrector lens and a different secondary mirror that is located inside of the corrector lens
- Telescopes also have different aperture sizes
  - Schmidt-Cassegrain is designed to have **a bigger aperture**
- Catadioptric telescopes have shorter optical tube than refractors and reflectors → take up **less space** and are easier to move
- Their secondary mirror degrades the **performance** for planetary and Moon observations, but overall they are still **great** for observing **all celestial objects**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