

5.2: The Telescope

“The early spectacle maker – today’s equivalent of an optometrist – set up shop in the open streets. The patient would try on different ‘spectacles’ to see which one provided the best improvement in vision.” The **telescope** is an instrument designed to **collect and magnify visible light** and **see detail**. Detail refers to **angular resolution**; think of resolving into finer details. Bigger telescopes collect more light and produce better resolution. However, the bigger the better is not always true; our atmosphere can limit a telescope’s resolving abilities.



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Before the Telescope

Specific discoveries led up to the invention of the telescope. Below they are divided in Year and Event.

- There are several basic terms we use when discussing telescopes. **Optics** is the science that deals with all aspects of visible light. **Primary Objective** refers to the main lens (refractor telescopes) or mirror (reflector telescopes) which gathers the incoming light. The **Eyepiece** is a lens or series of lenses which focuses the light from the telescope’s primary objective for the eye. **Refraction** is the bending of waves, such as light, when it passes from one substance to another, for example, from air

through glass. Refraction is the primary method of a refracting telescope. Reflection is the bending of waves, such as light or sound waves, from a surface. **Reflection** is the primary method of a reflecting telescope.

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