



History and Development of Telescopes

exploring the wonders of gravity

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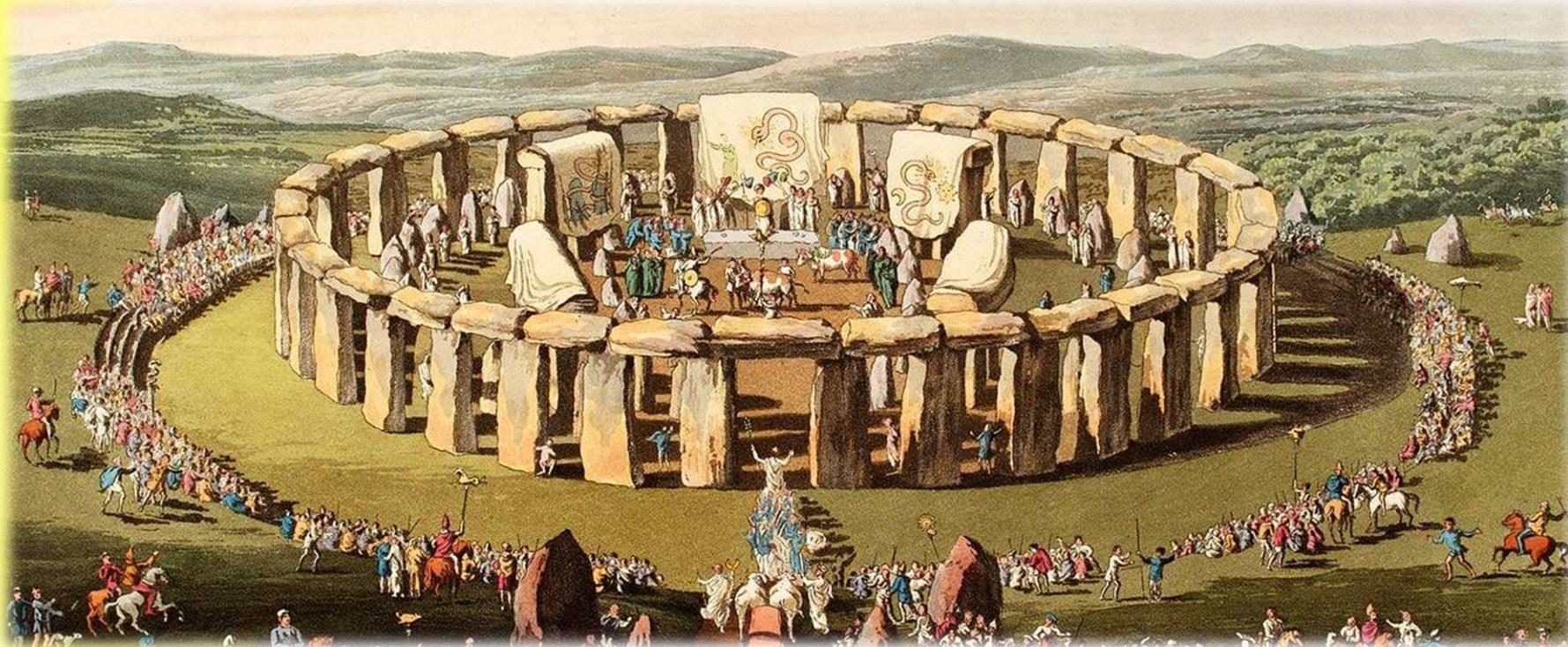
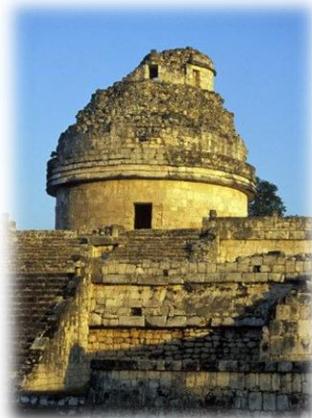
Educate - Inspire - Innovate



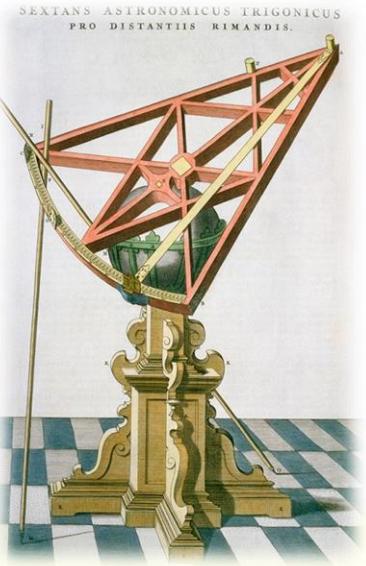
Beauty is in the eye
of the beholder!



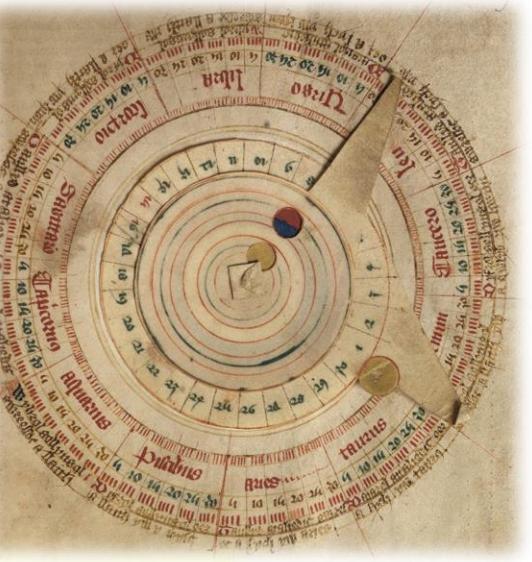
The Night Sky through the bare eyes – Ancient Observatories



Early Instruments to watch the sky



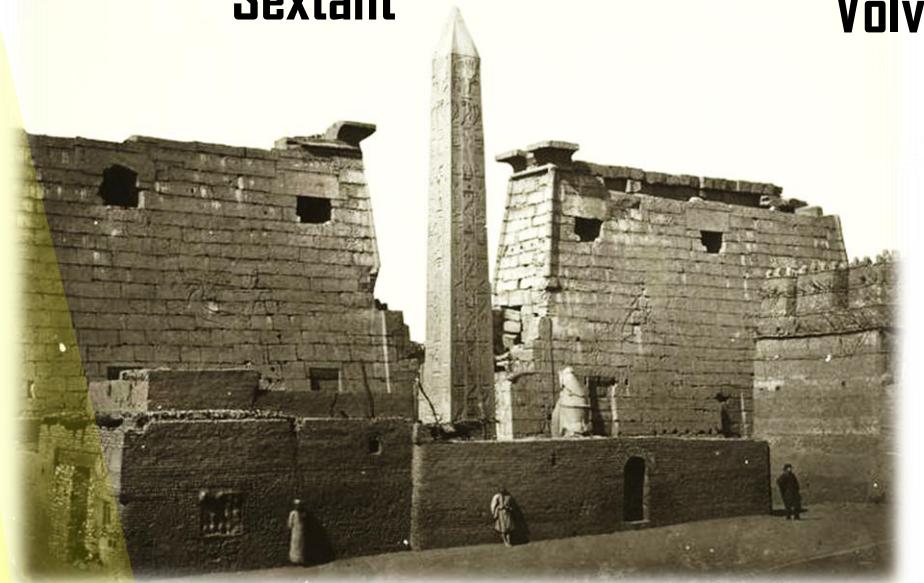
Sextant



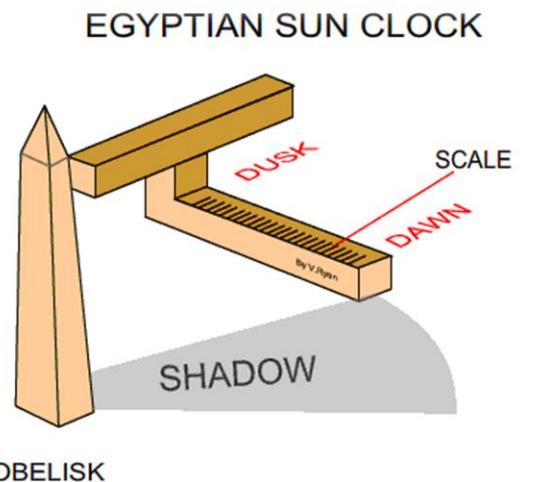
Volvella



Antikythera



Obelisk

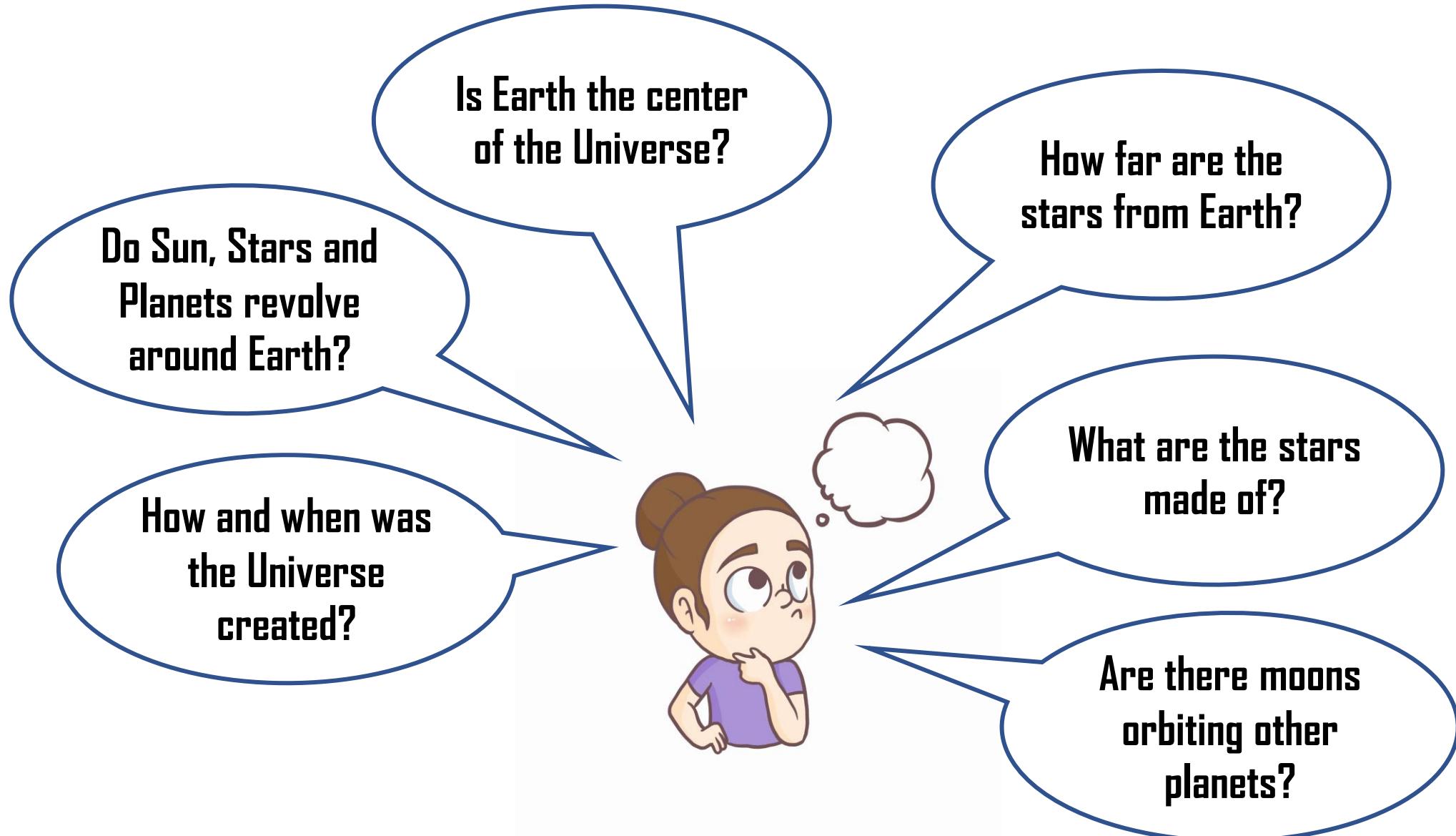


OBELISK



Astrolabe

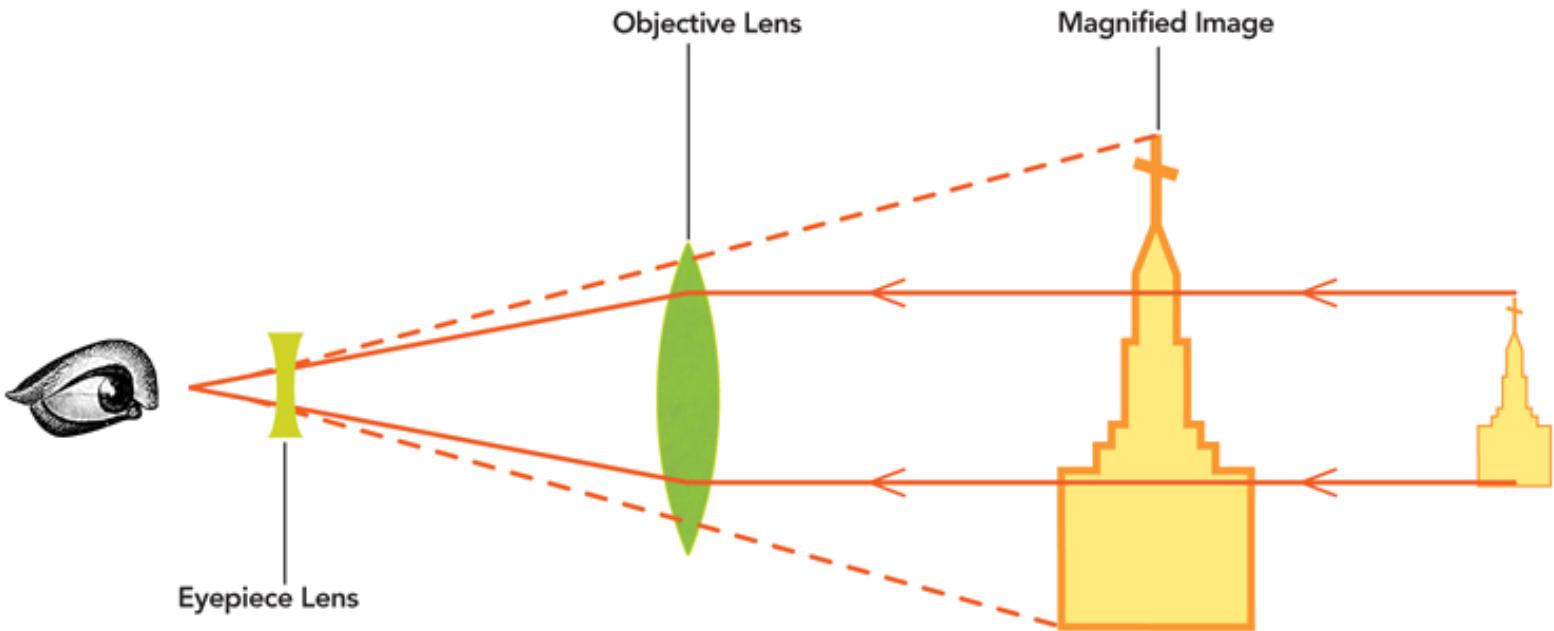
Many questions were still unsettled...



Hans Lippershey and his 'Perspective Glasses'

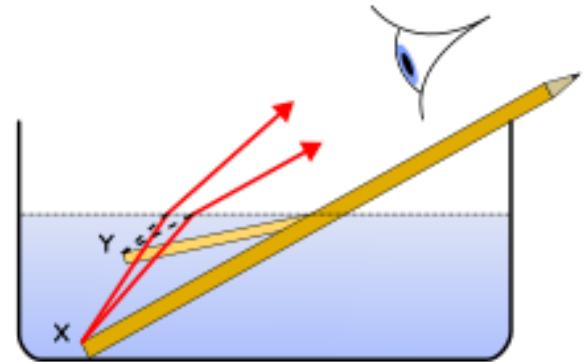
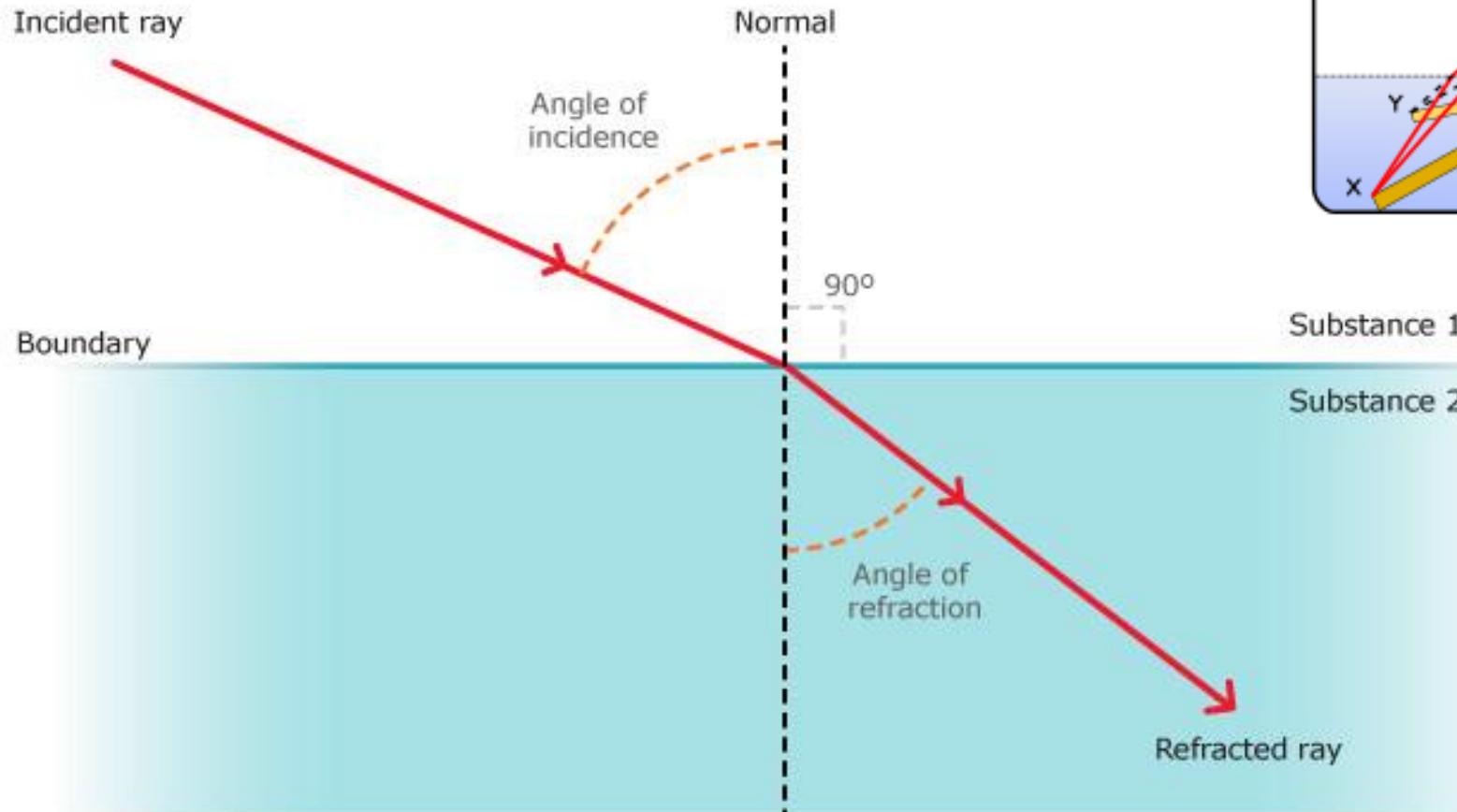


- Filed a patent for a refracting telescope in 1608
- Objective Lens – Convex lens; Eyepiece – Concave lens
- Magnification of three to four times



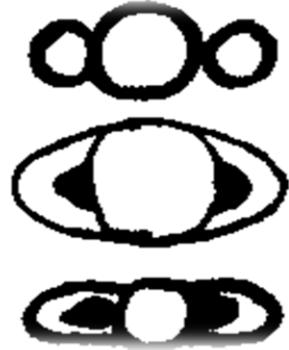
What is Refraction?

Refraction of light

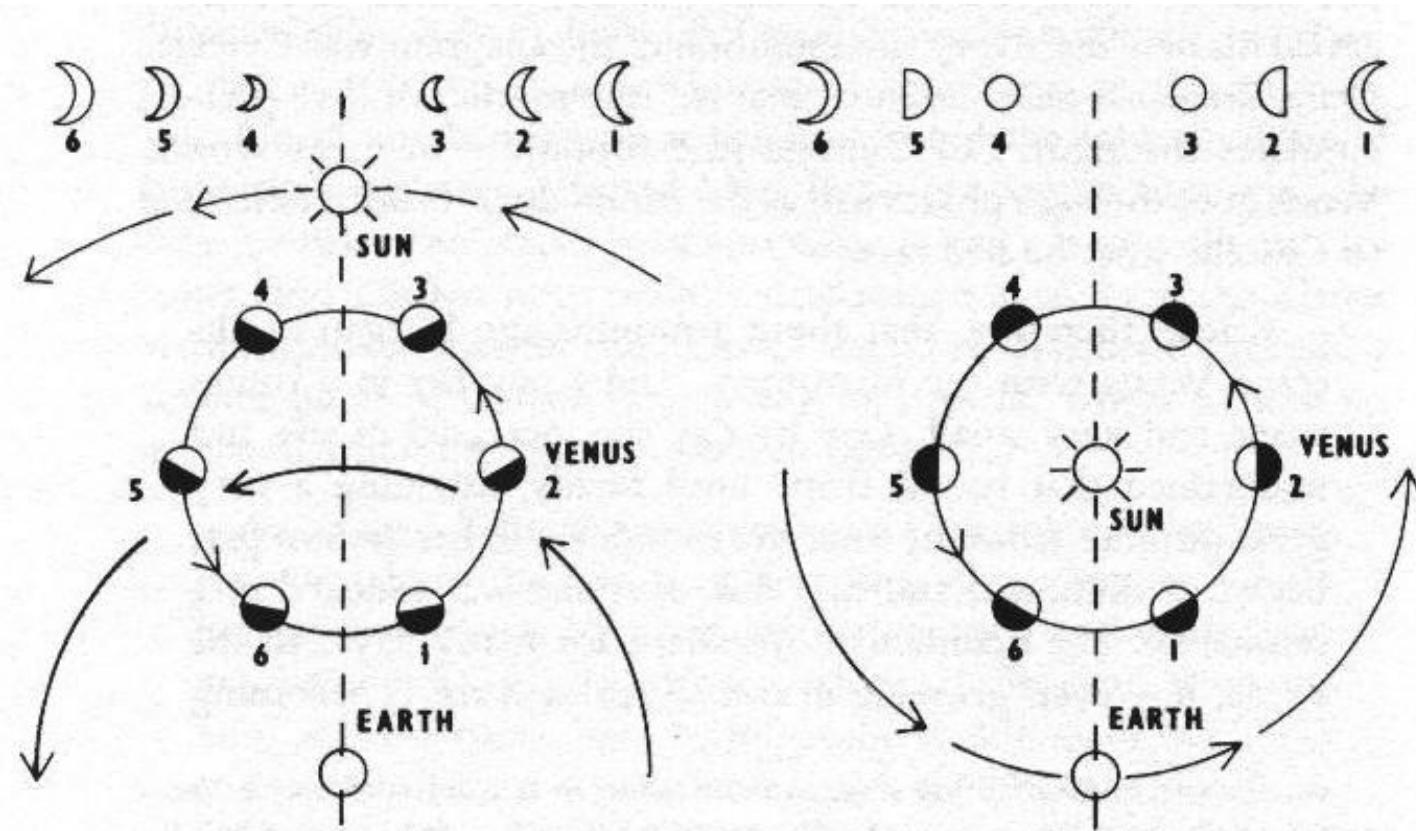


Galileo Galilei and the glasses that changed the game





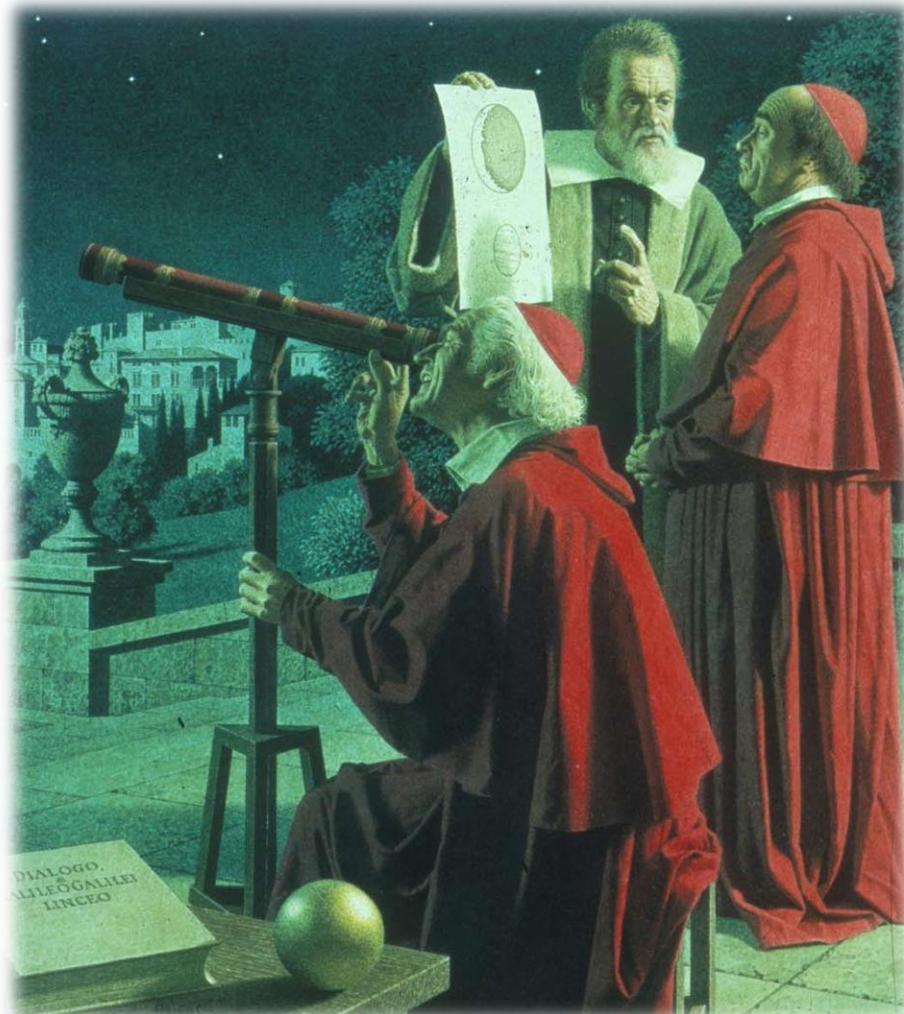
- The new revelations like mountains on moons, moons of Jupiter and rings of Saturn
- Proof for Heliocentric Model from the observation of Venus



Giovanni Demisiani – coined the term Telescope

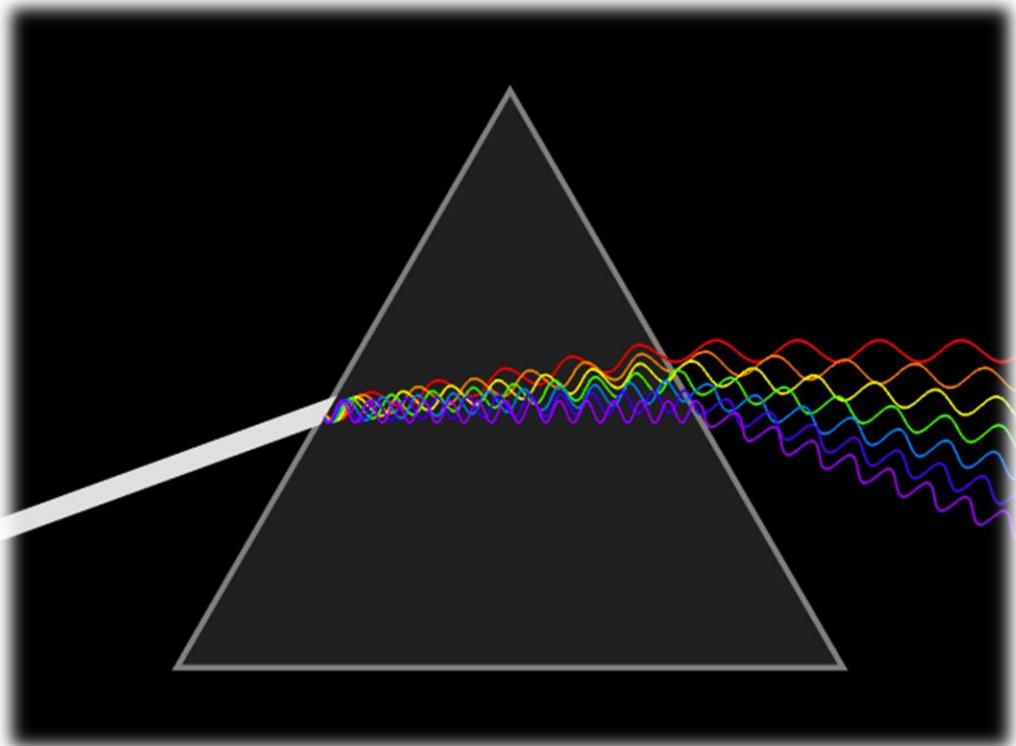
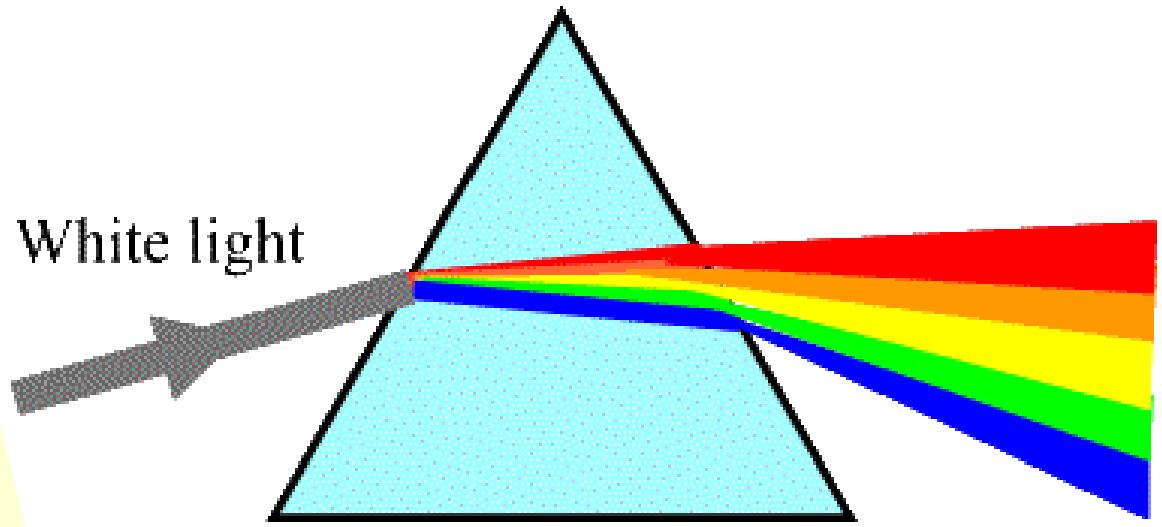


Trial by the Catholic Church



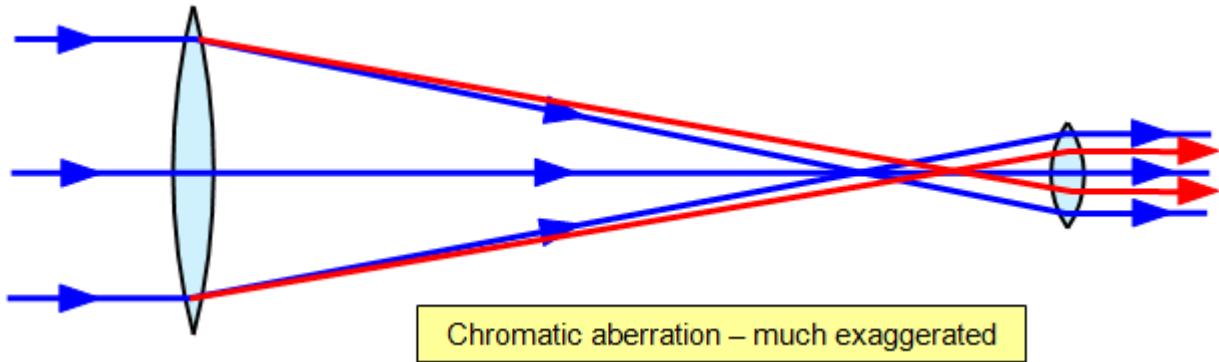
White light and its components

Refraction through a prism



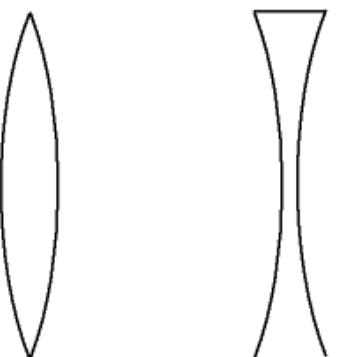
Problems of a Refracting Telescope

1. Chromatic Aberrations



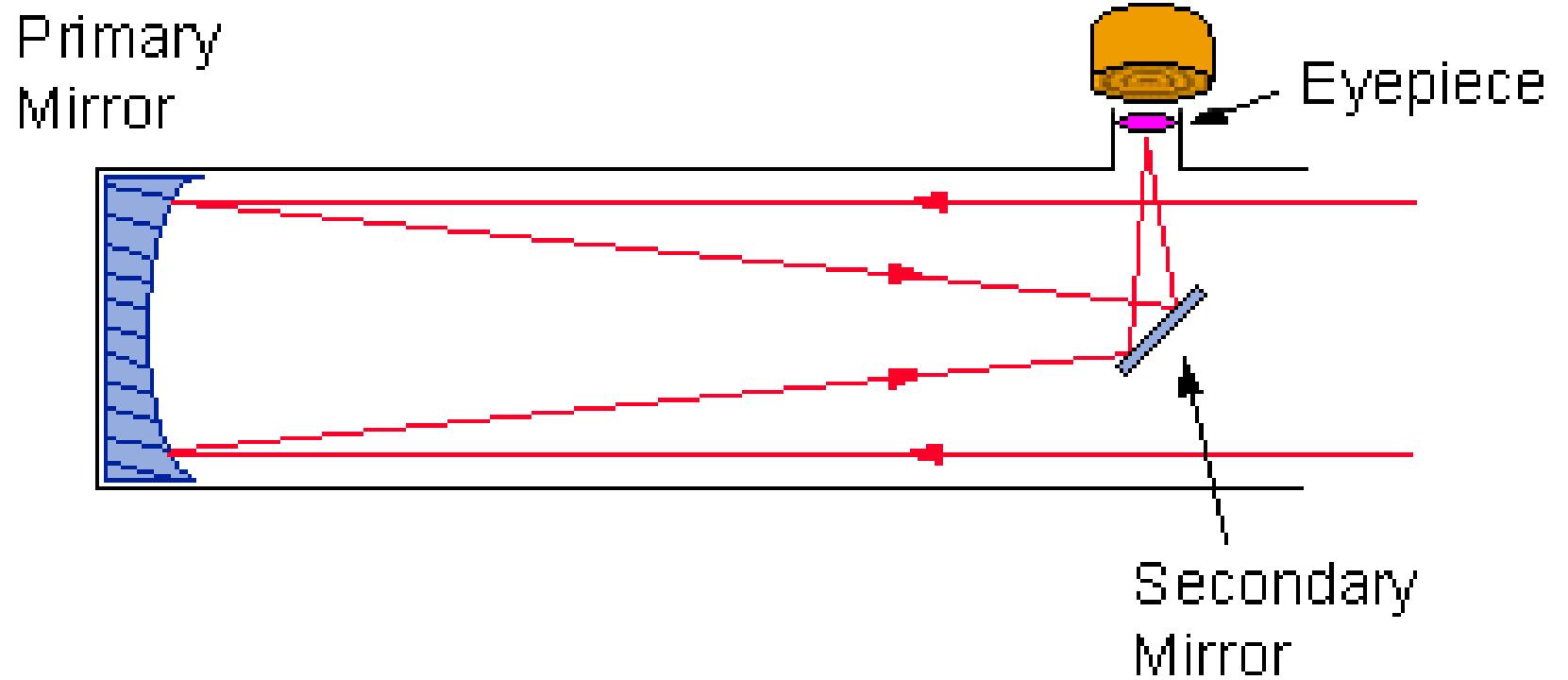
2. Limited maximum diameter of the lens

convex lens concave lens

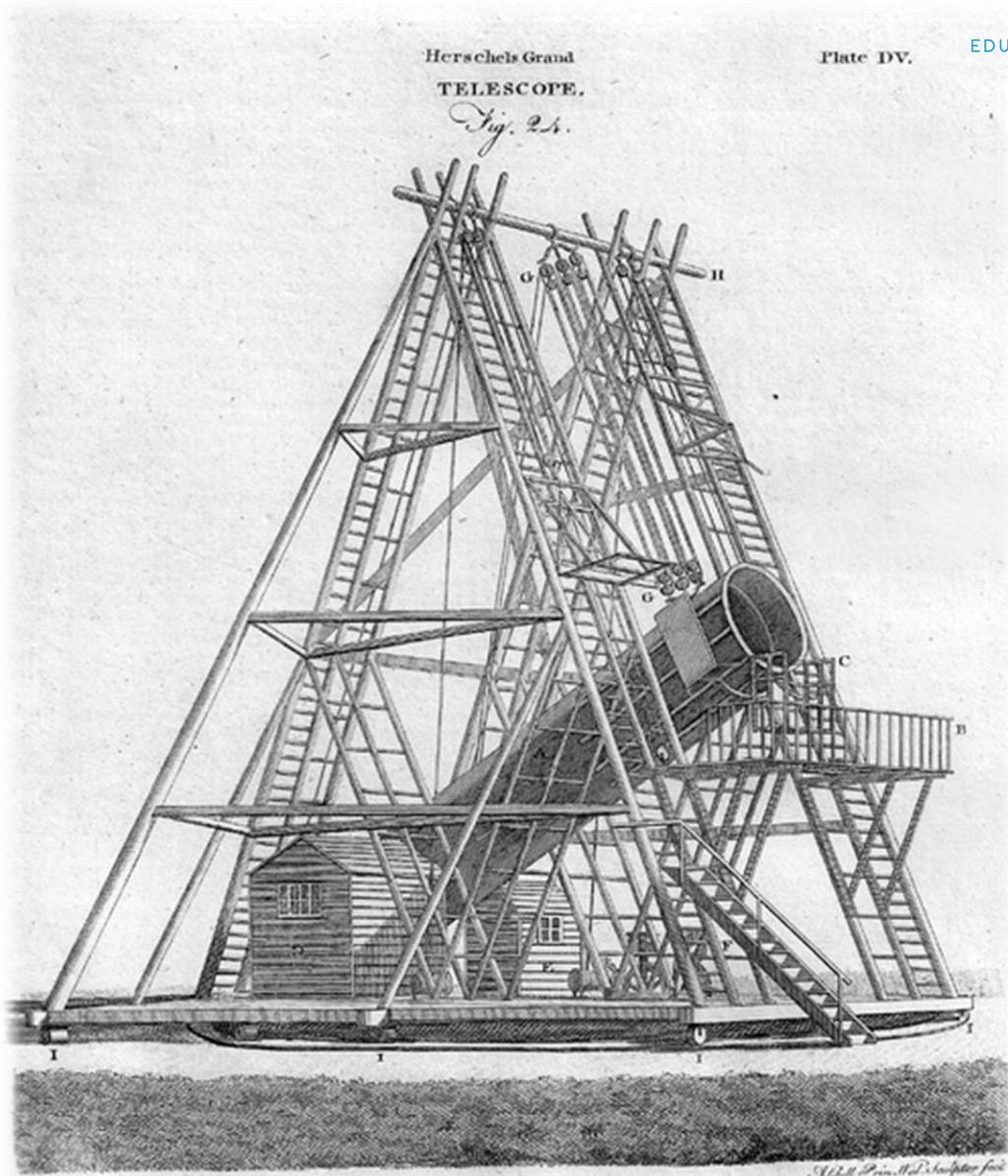


Sir Isaac Newton and Reflecting Telescope

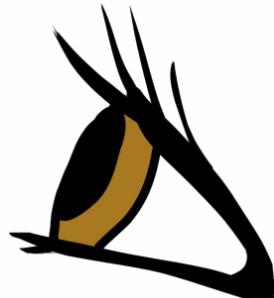
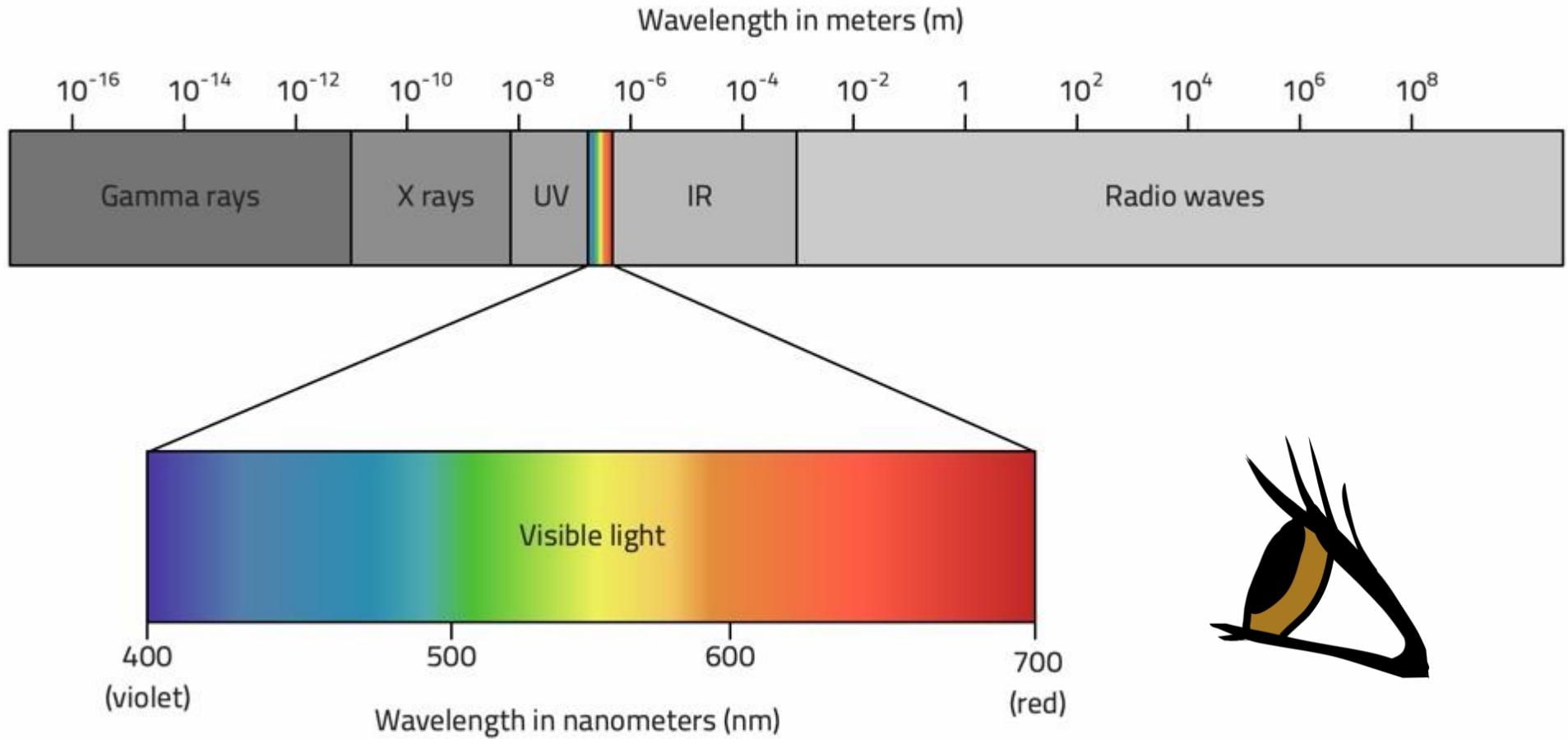




Sir William Herschel and 40 foot Telescope

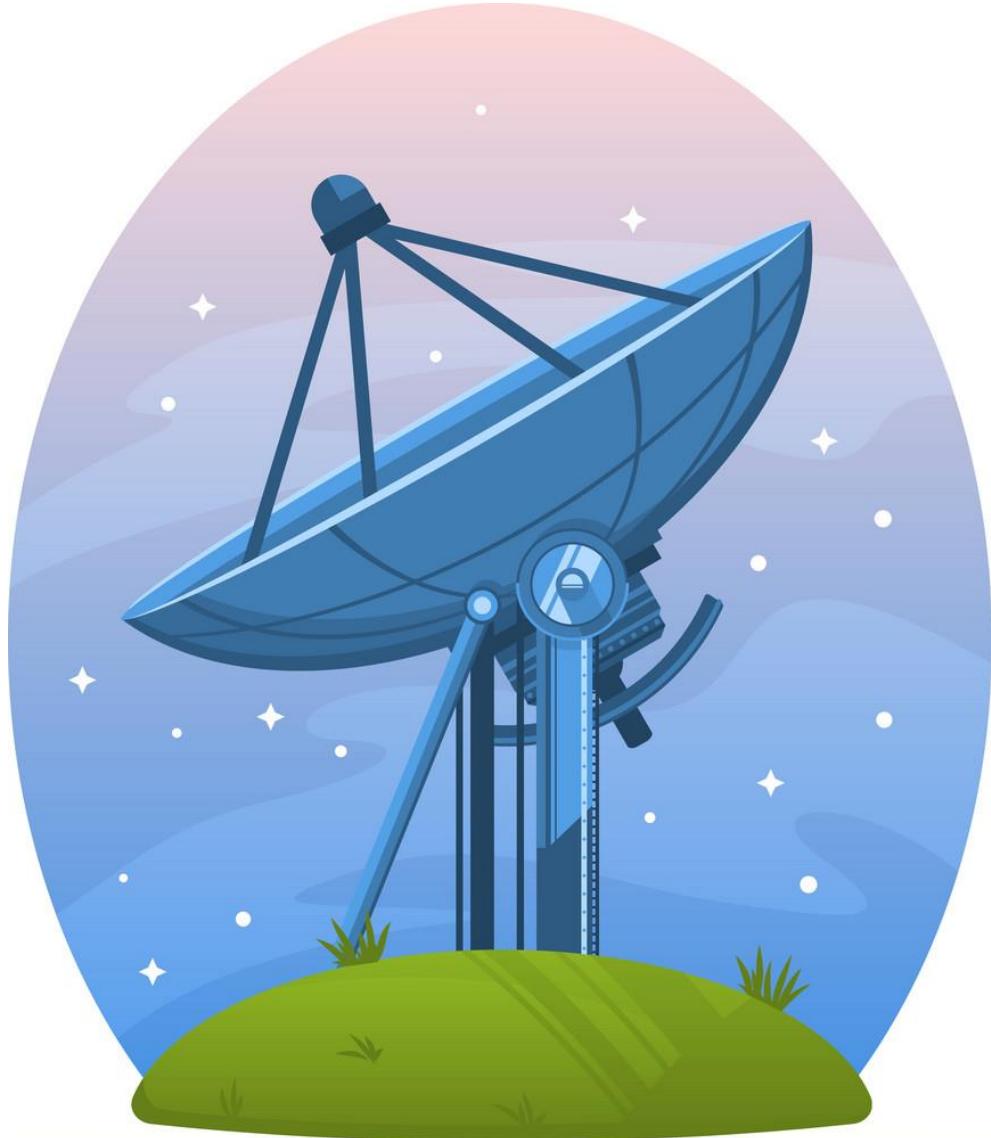


There's much more than what meets the eye...



Watching the night sky in the invisible spectrum

- Radio Telescopes
- Infrared Telescopes
- X-Ray Telescopes
- UV Telescopes
- Gamma-Ray Telescopes

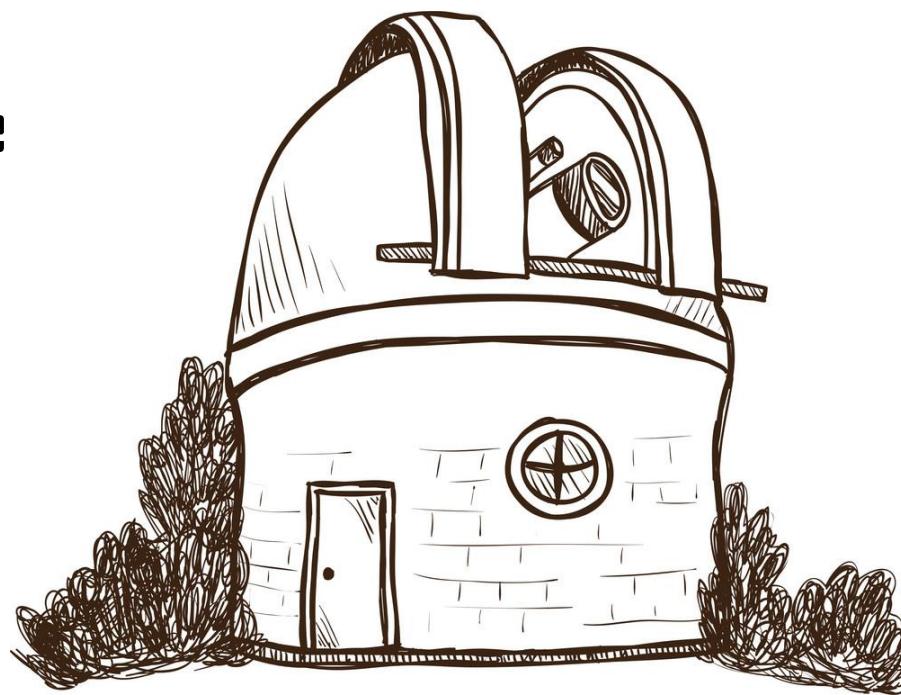




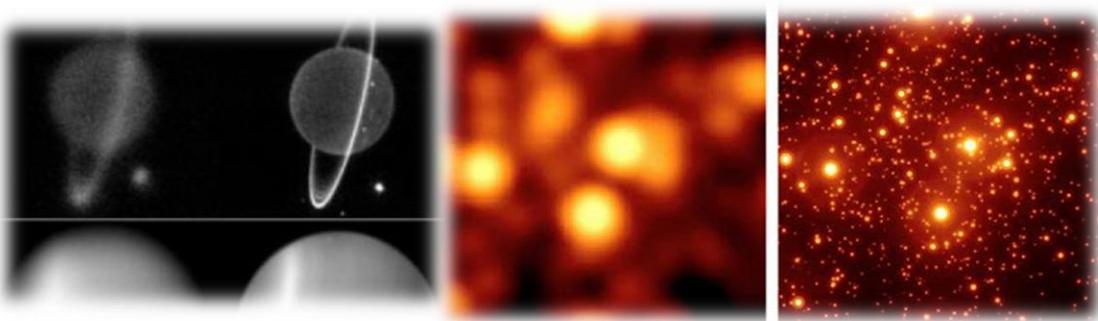
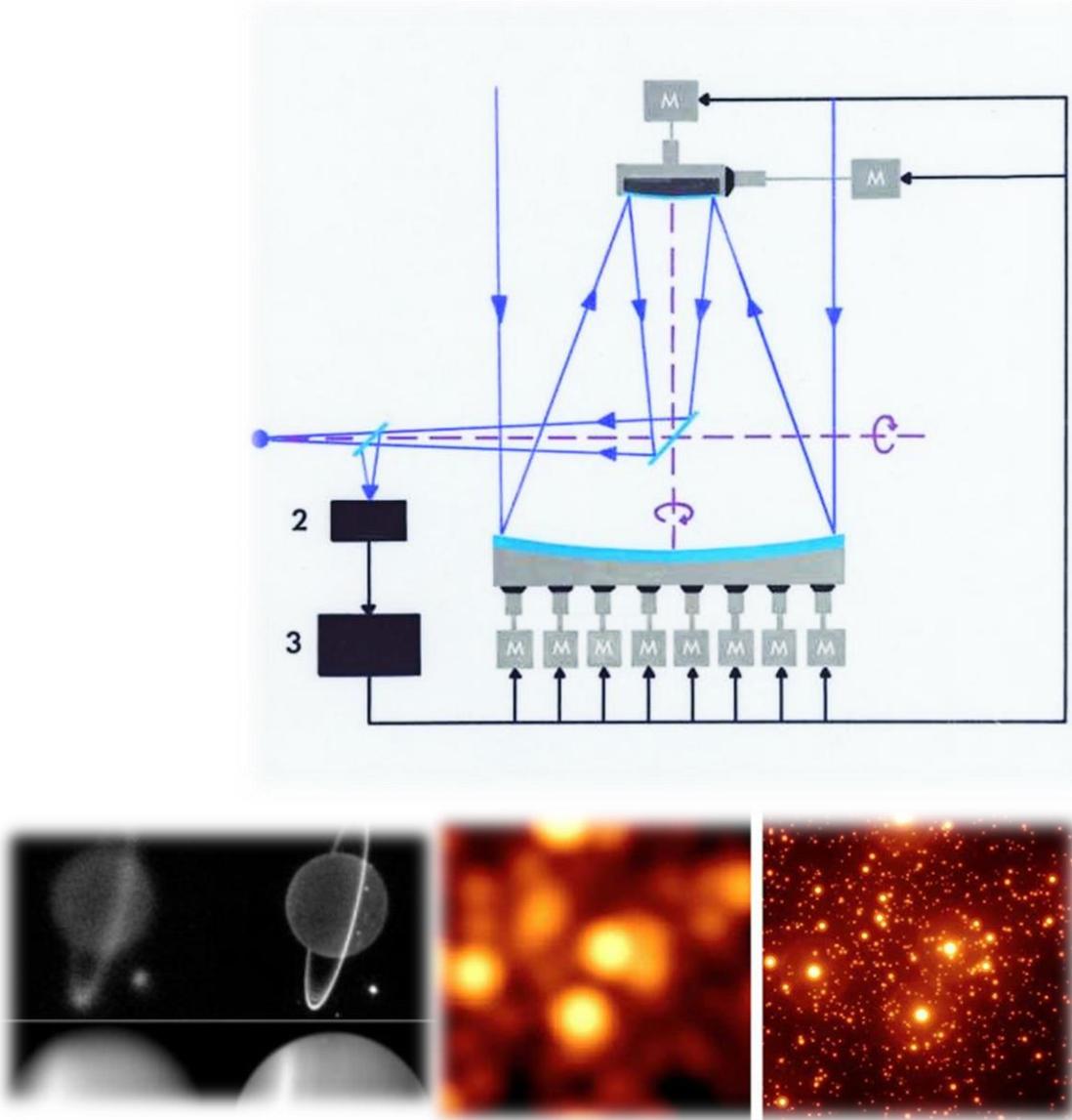
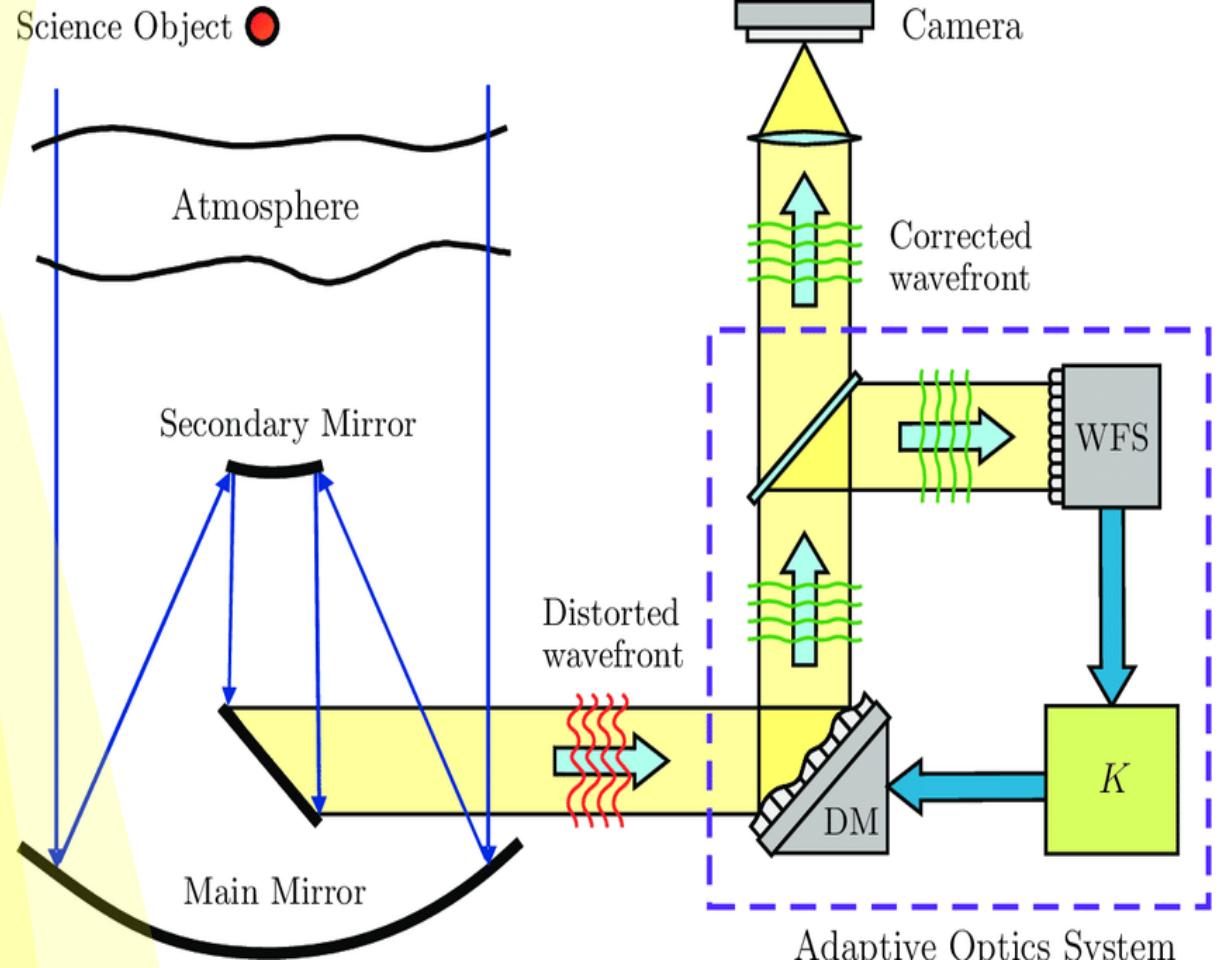
Ground Based Observatories

These are large telescopes located on the surface of Earth in a remote area away from human population and light pollution to observe the night sky.

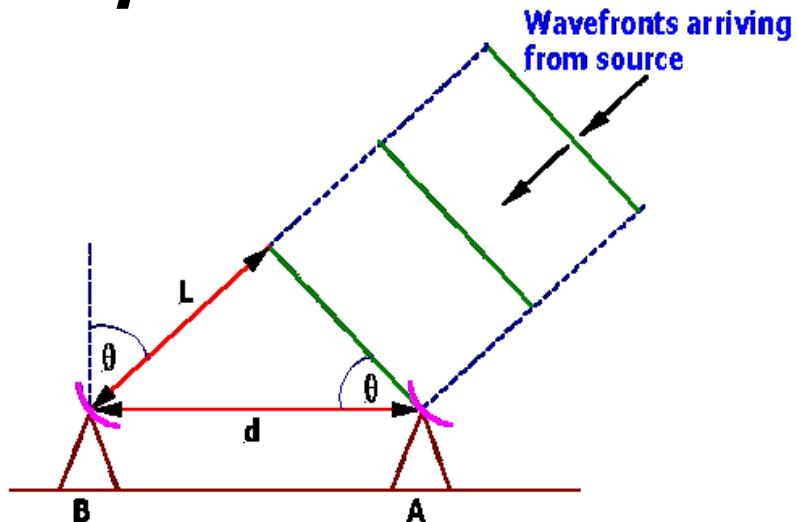
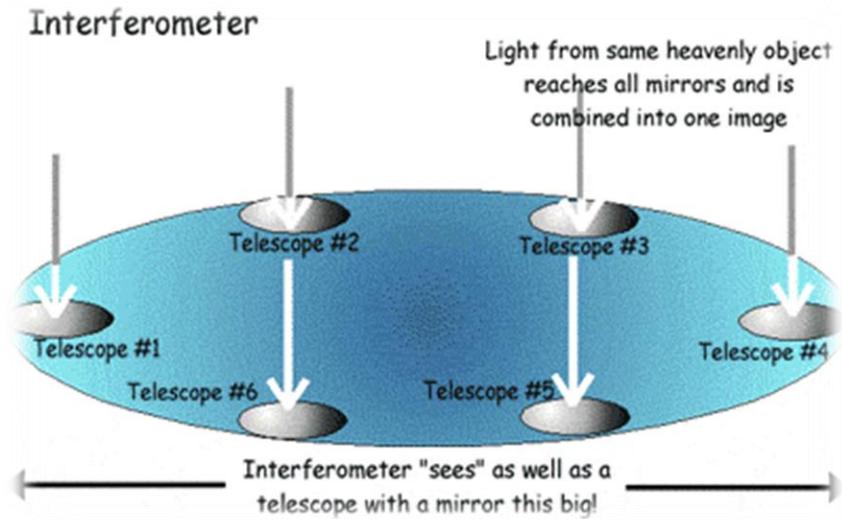
They are usually used to observe the night sky in visible spectrum and radio-wave spectrum.



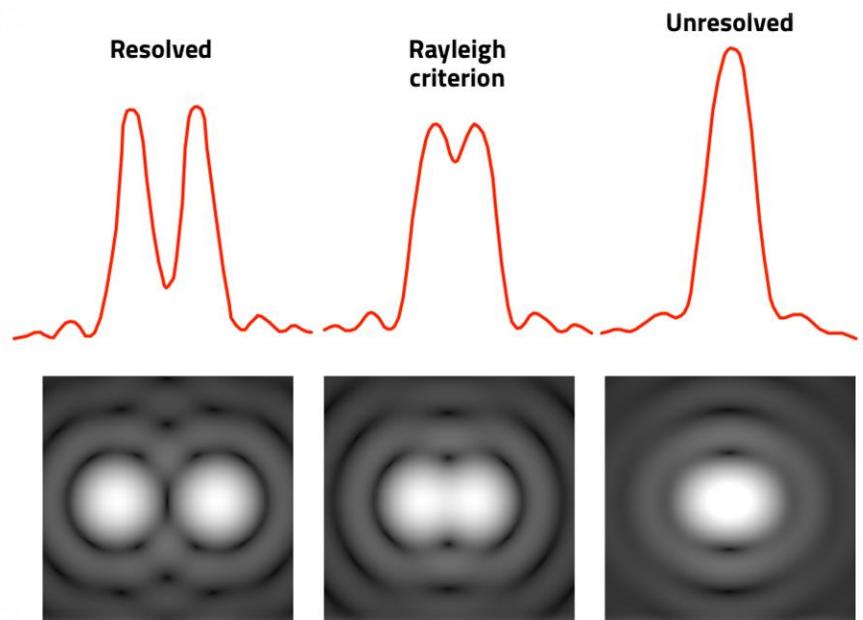
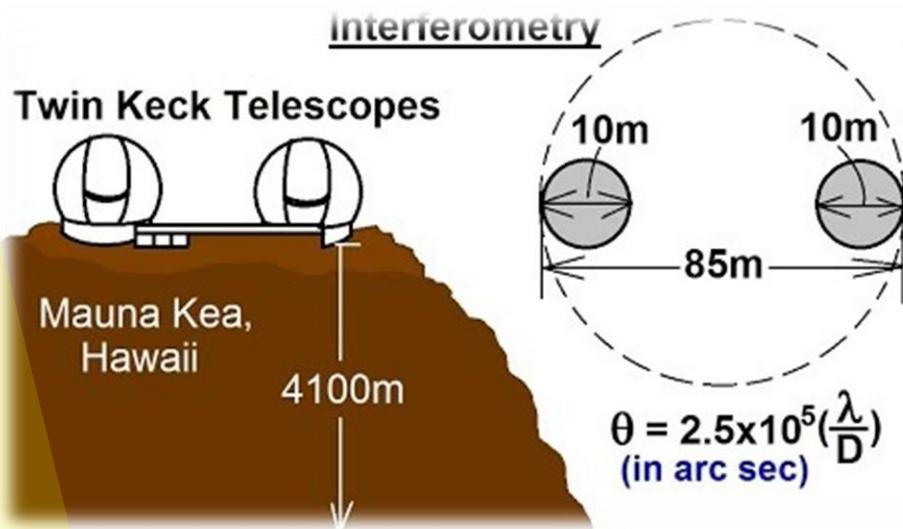
Adaptive Optics



Interferometry



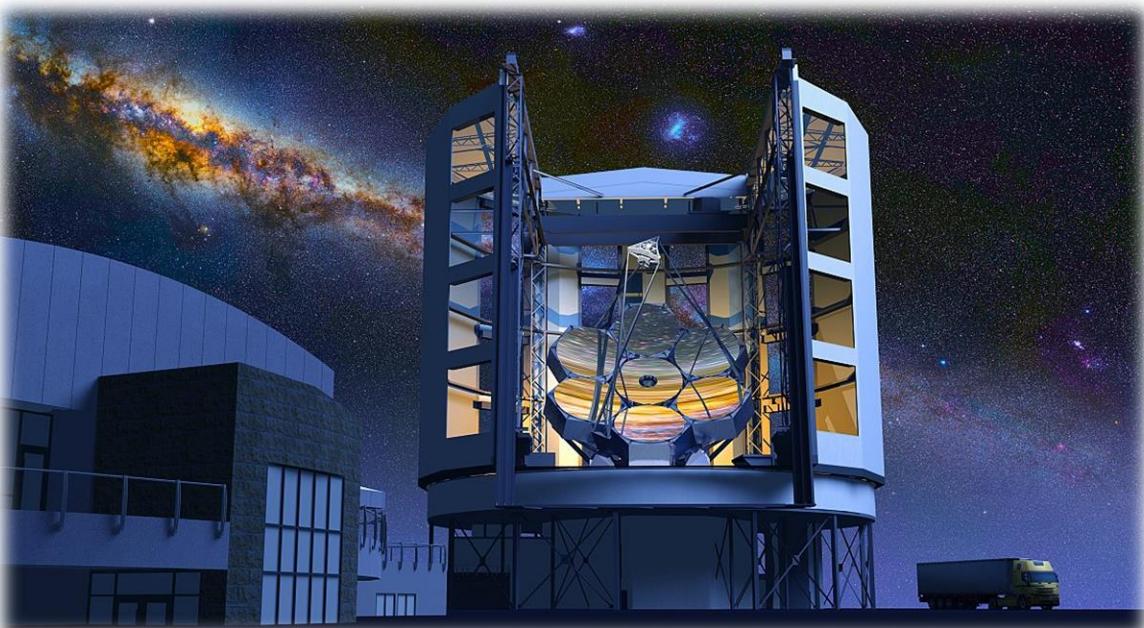
An Example of Radio Interferometry

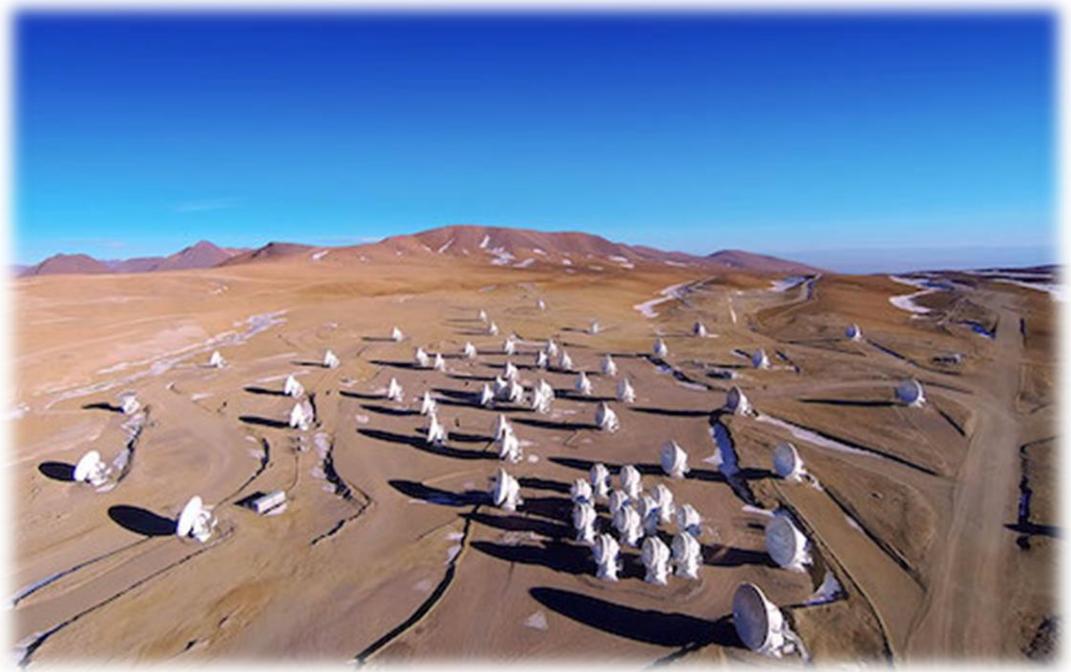




Keck Observatory

Giant Magellan Telescope





Atacama Large Millimetre/submillimetre Array (ALMA)

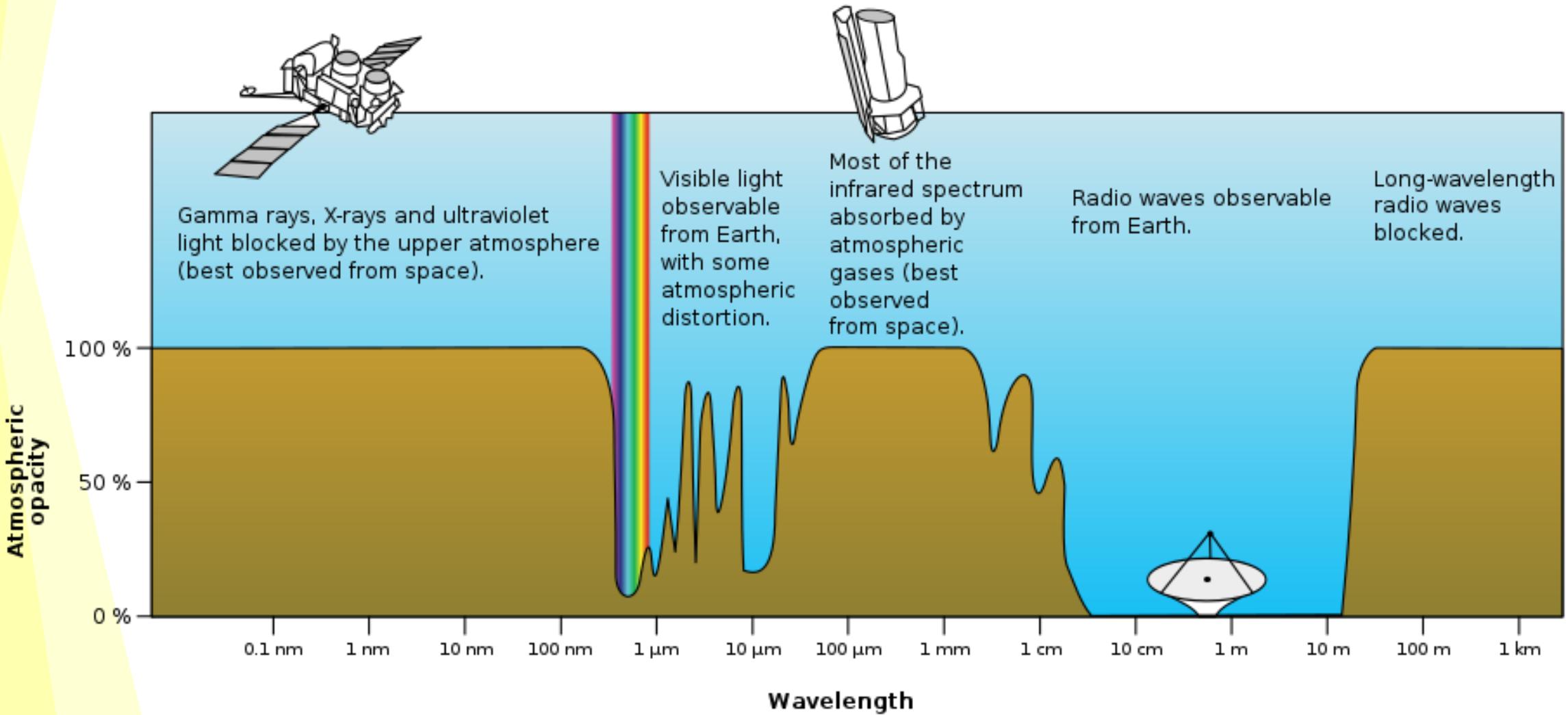


Arecibo Radio Telescope, Puerto Rico

Five-hundred-meter Aperture
Spherical Radio Telescope (FAST),
the largest single dish telescope



The barrier of Atmosphere



Air-borne Observatories



Sofia Telescope



Space Telescopes



Hubble Space Telescope

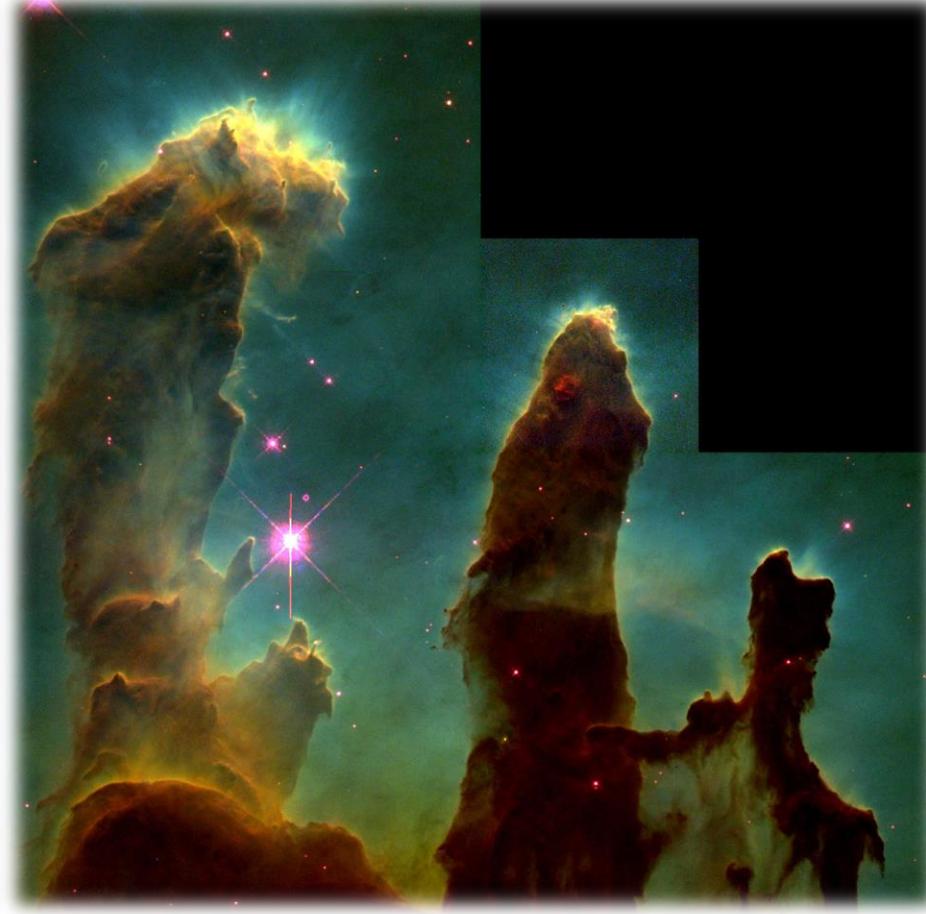


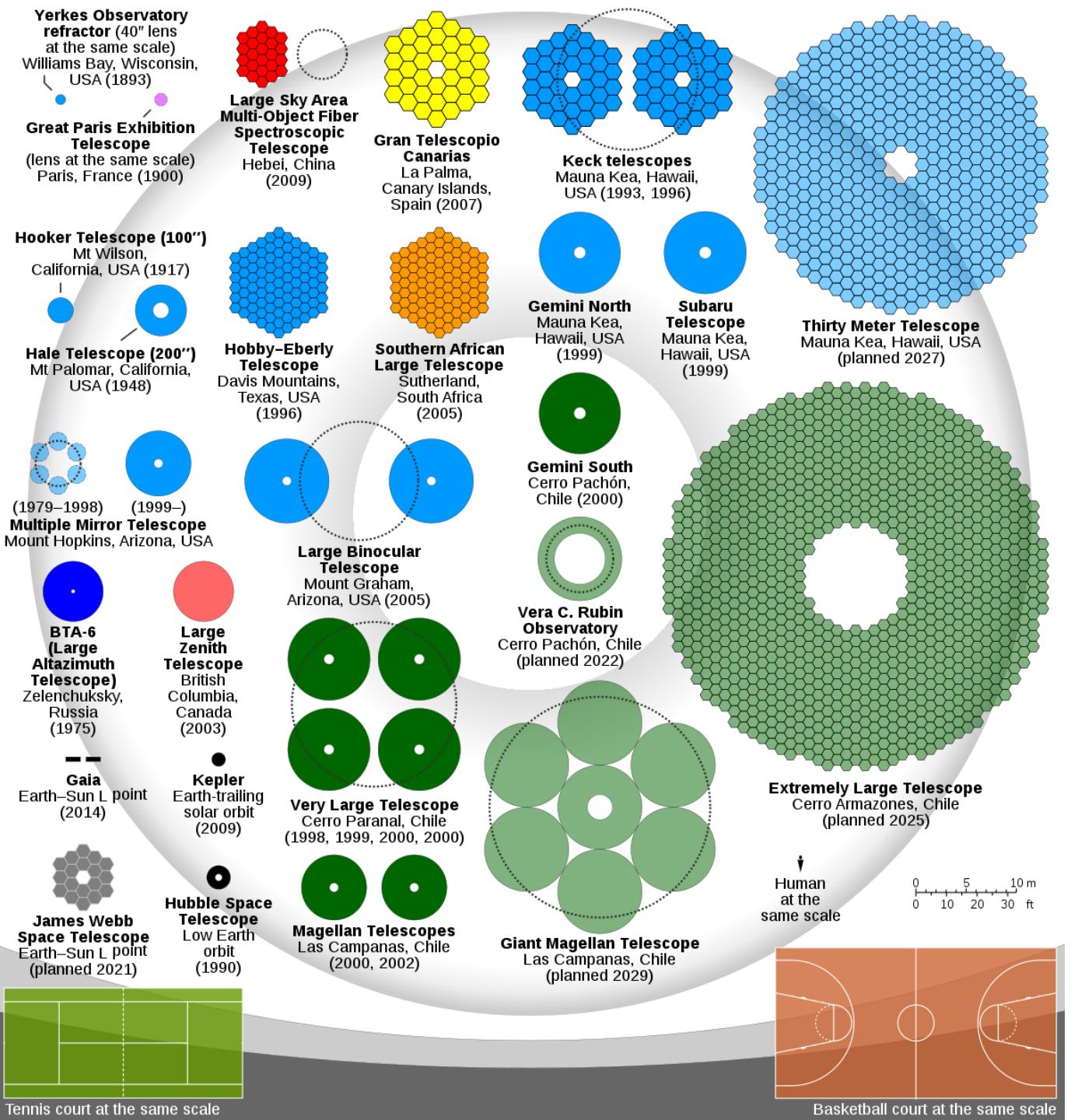
Image by Hubble

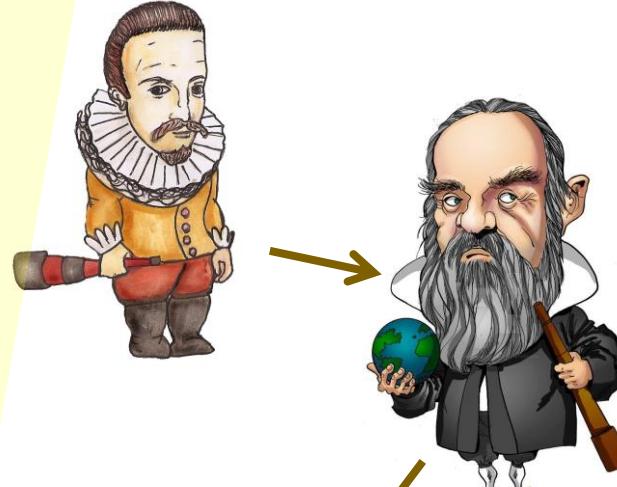


James - Webb Space Telescope

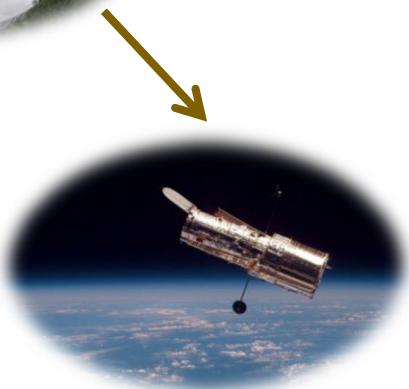


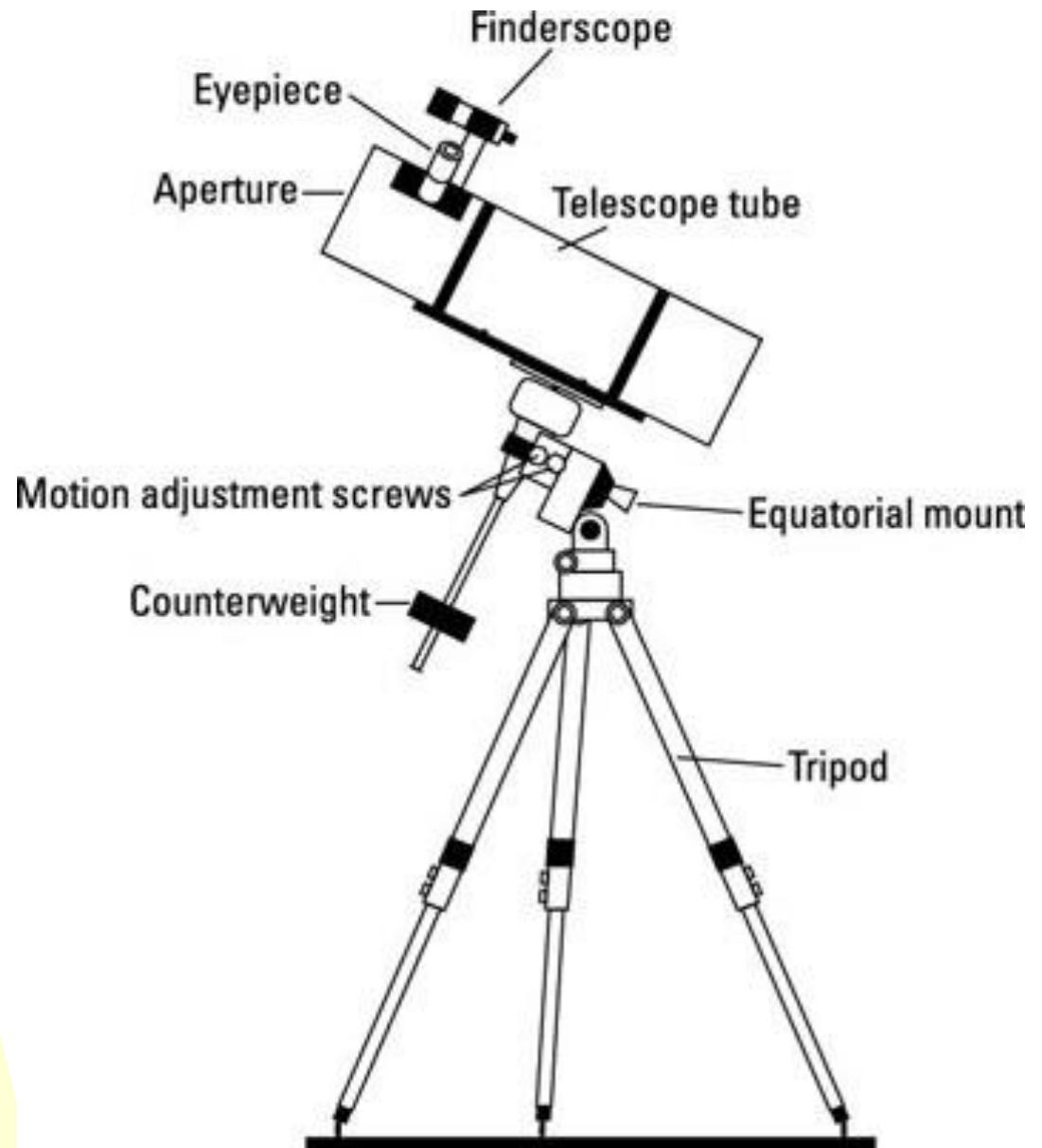
Chandra X-ray Observatory



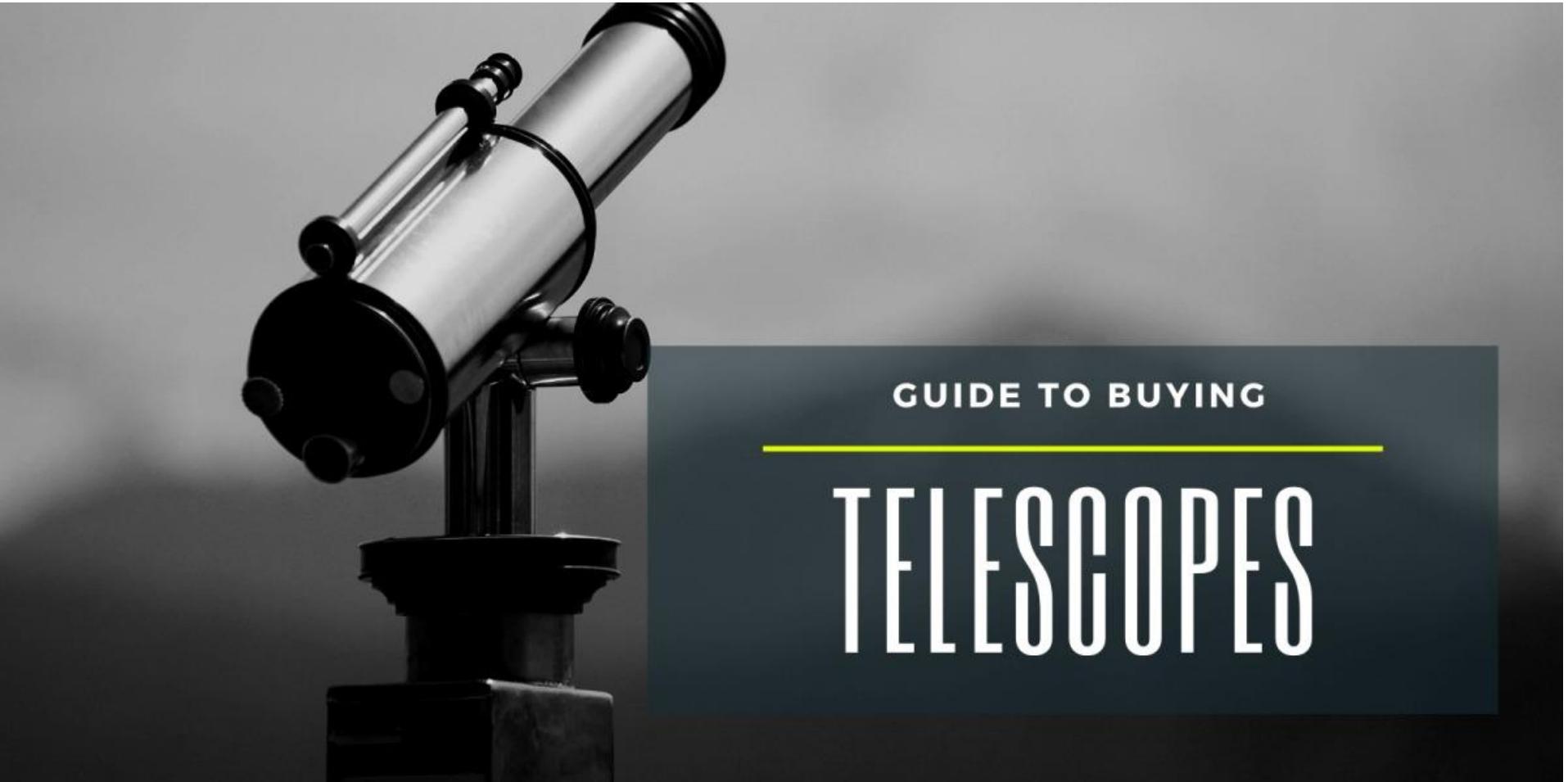


Let's have a quick recap!





Parts of a Hobby Telescope



Check out: <https://edgeofspace.in/telescope-buying-guide/>



Thank You!

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