1 Light and Telescopes

1.0.1 Electromagnetic Radiation - Light

Made up of particles - photons

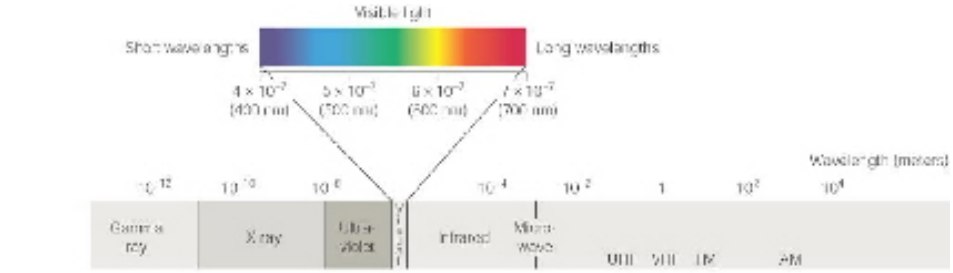
Macrowavelength - λ distance between successive peaks

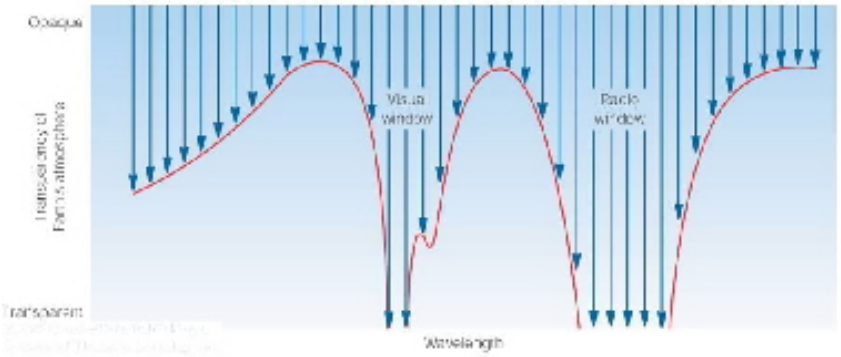
Speed of light - $c = 2.99792458 \times 10^8\,\mathrm{m/s}$

Frequency - f - the number of oscillations per second

Relationship - $c = \lambda f$

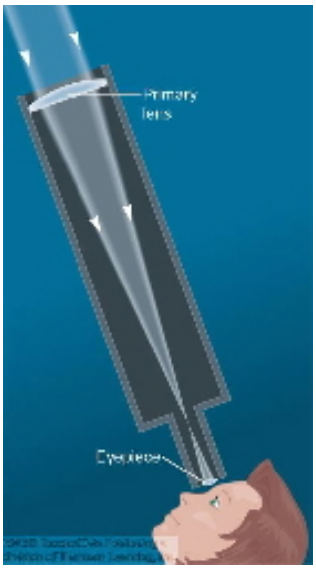
Electromagnetic spectrum



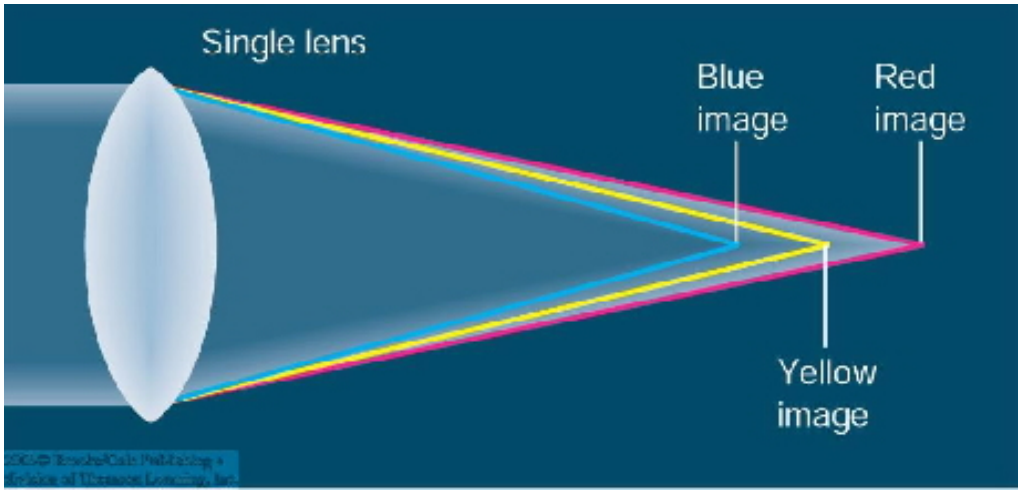


1.1 Astronomical Telescopes

Refracting telescope - uses lenses



- Drawback - chromatic aberration



Reflecting telescope - uses mirrors Types

- Prime focus
- Newtonian
- Cassegrain

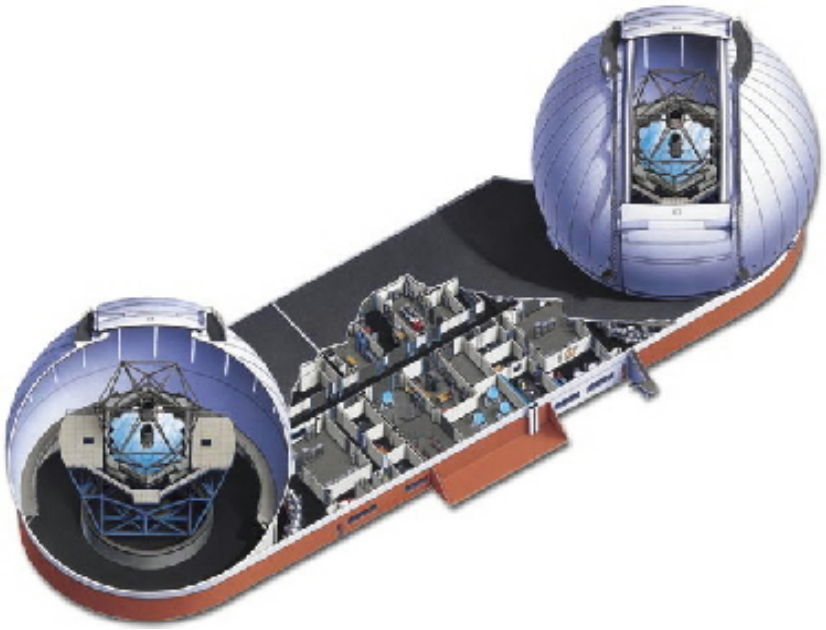
- Schmidt-Cassegrain
- Coudé focus

Mountings

- Alt-Azimuth
- Equatorial
- Dobsonian

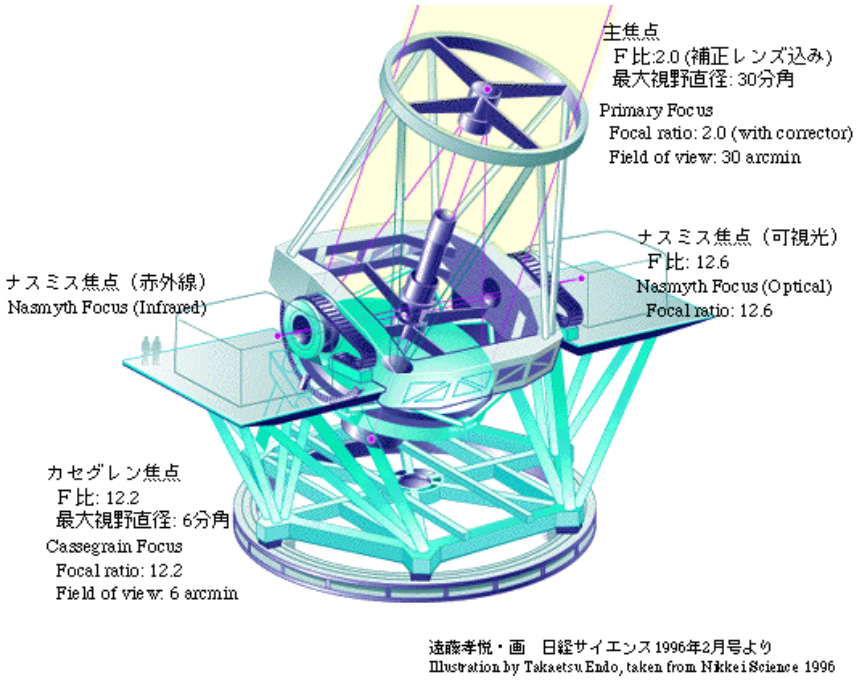
Observatories

Canary Islands



Keck I and II

Palomar Observatory



Subaru IR Telescope

http://www.mtwilson.edu/**??**

Here's one you can run yourself, the Bradford Robotic Telescope. (**??**) www.telescope.org/

1.1.1 Space Astronomy

Satellites http://www.seds.org/~spider/oaos/oaos.html**??** (http://www.seds.org/~spider/oaos/oaos.html)

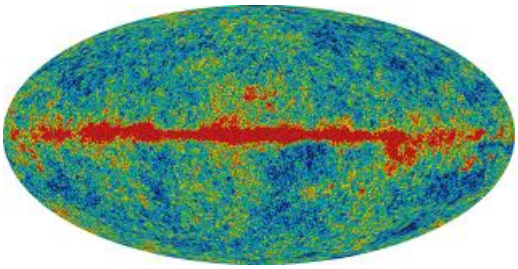
Optical Hubble Space Telescope **??** **??** (http://www.nasa.gov/mission_pages/hubble/main/index.html)

Ultra-Violet (UV) International Ultraviolet Explorer

Gamma Ray $(\gamma - ray)$ Compton Gamma Ray Observatory (CGRO) **??** (http://heasarc.gsfc.nasa.gov/docs/cgro/index.html)

X-Ray Chandra http://www.nasa.gov/mission_pages/chandra/main/index.html**??** (http://www.nasa.gov/mission_pages/chandra/main/index.html)

Microwave WMAP http://map.gsfc.nasa.gov**??** (http://map.gsfc.nasa.gov)



Infrared Spitzer IR Observatory http://www.spitzer.caltech.edu/**??** (http://www.spitzer.caltech.edu/)
Radio Astronomy
Greenbank, WV **??** (http://www.gb.nrao.edu/)
Arecibo, PR http://www.naic.edu/**??** (http://www.naic.edu/)
VLBA http://www.nrao.edu/**??** (http://www.nrao.edu/)