

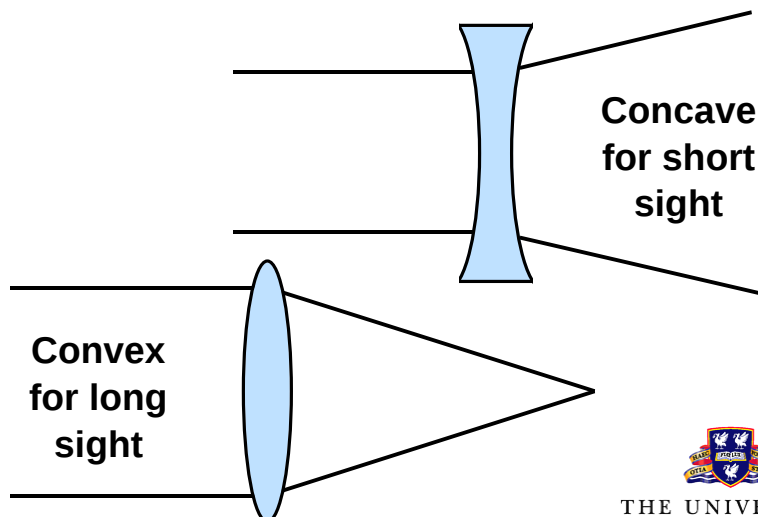
Keeping an Eye on the Universe

The development of the astronomical telescope
from the Middle Ages to the new millennium

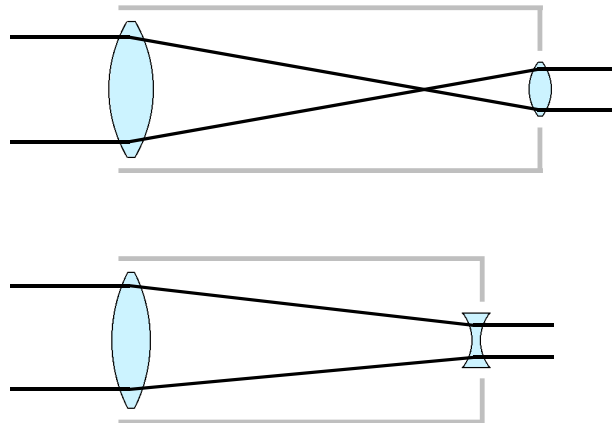


Dr Steve Barrett

Spectacle Lenses

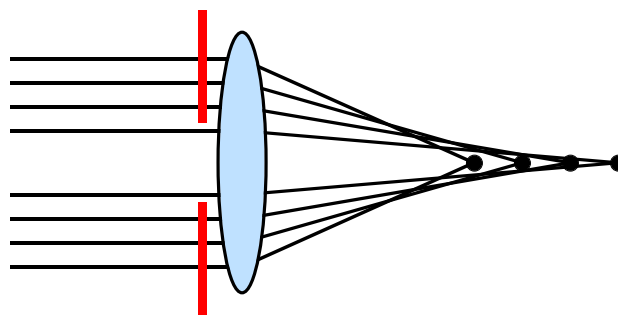


Galileo and Kepler

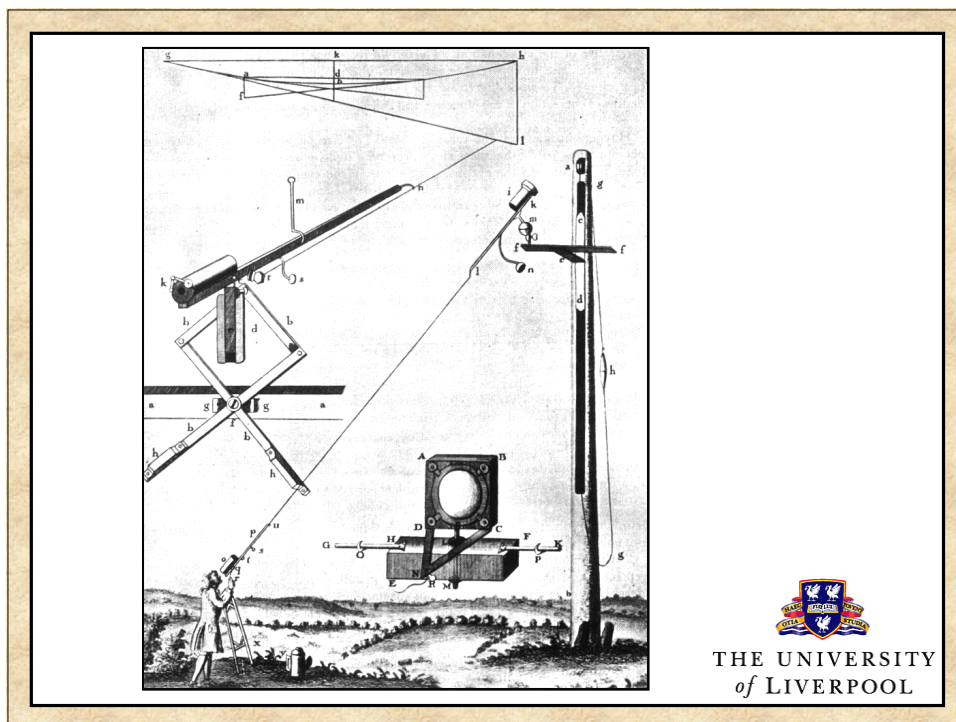
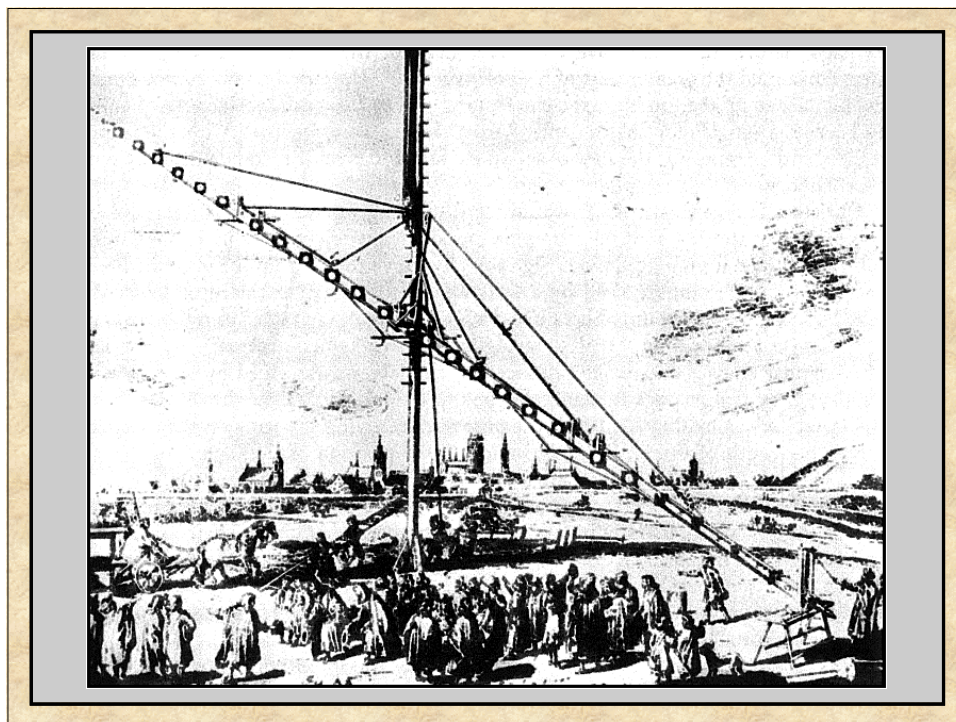



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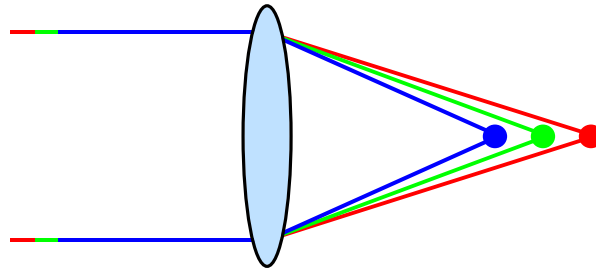
Spherical Aberration




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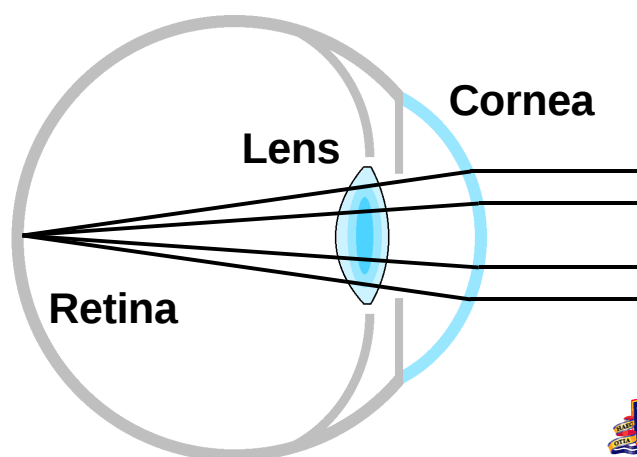


Chromatic Aberration




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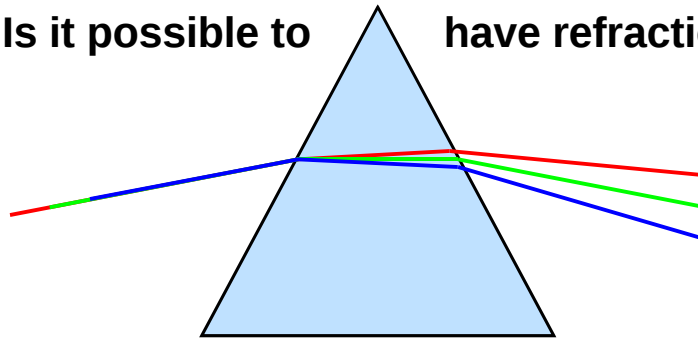
Kepler and the Human Eye




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Refraction and Dispersion

Is it possible to have refraction

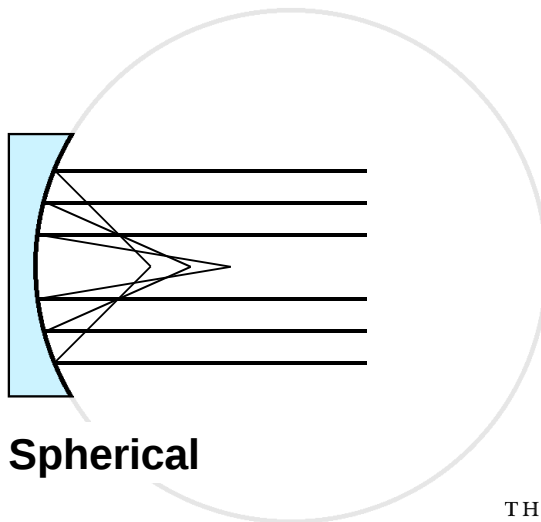


without dispersion ?



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Reflecting Mirrors

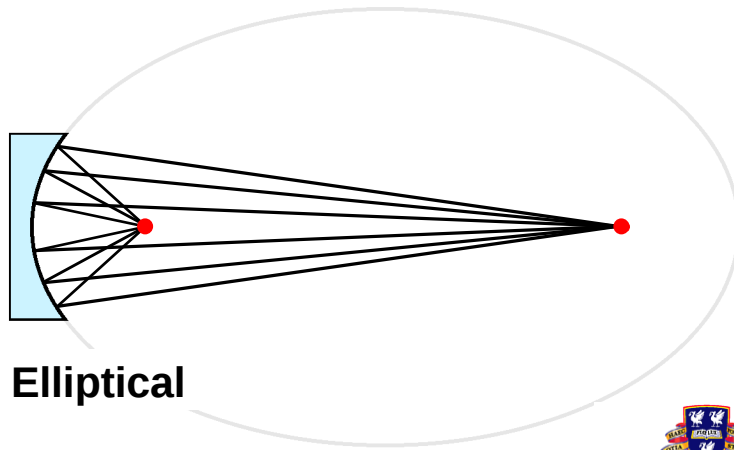


Spherical



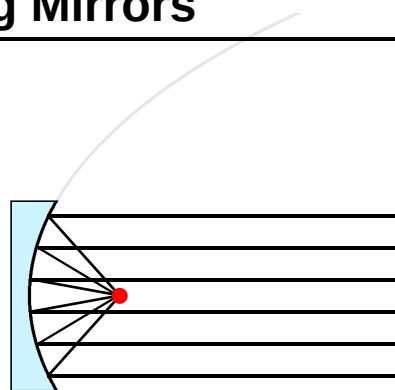
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Reflecting Mirrors



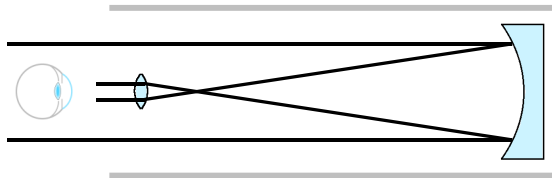
Elliptical

Reflecting Mirrors

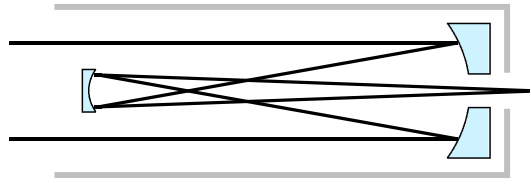


Parabolic

Reflecting Telescopes

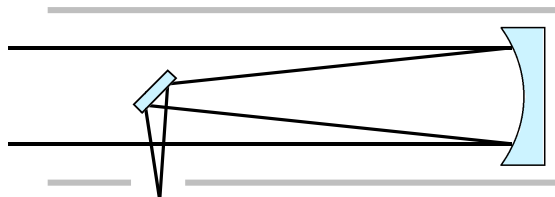


Parabolic




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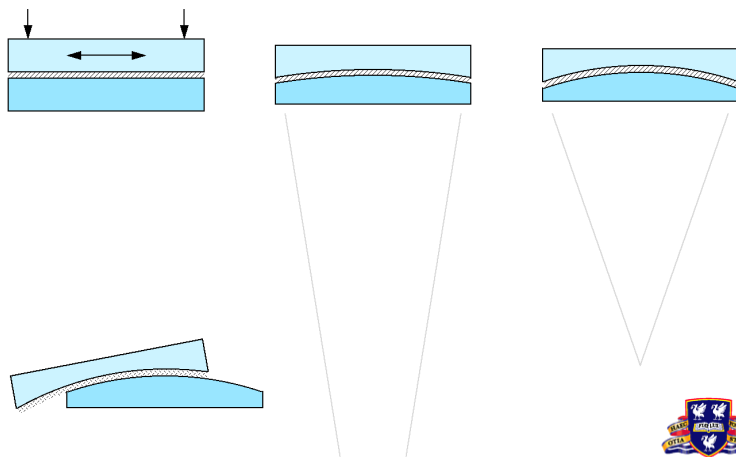
Newtonian Telescope



Spherical


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Why Spherical?



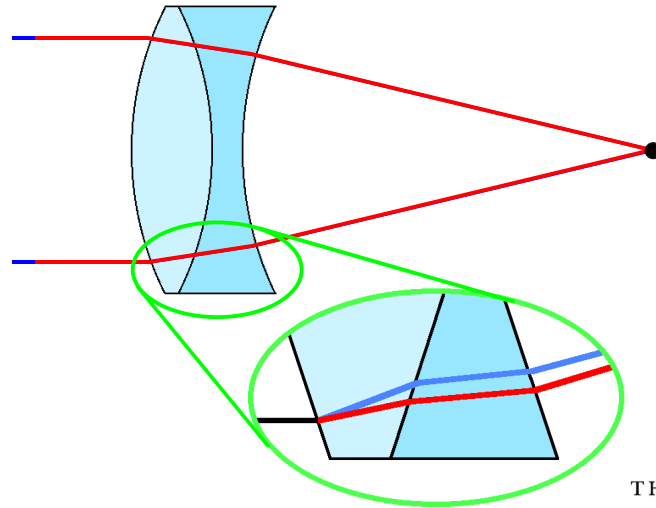

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Refractors vs Reflectors

1600	Galileo		
	Kepler		
1650			Newton
	Hevelius		Cassegrain
1700			
	Hall		Hadley
1750	Dolland		
1800			


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Achromatic Lens



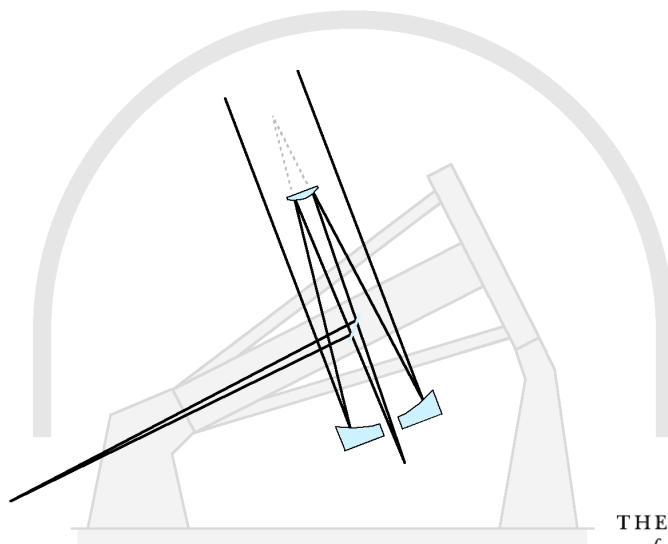

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Death of the Refractor

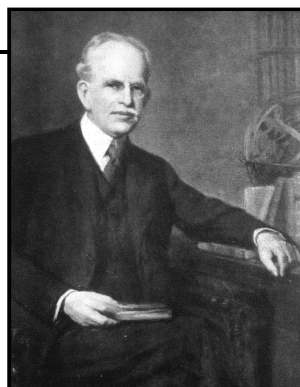
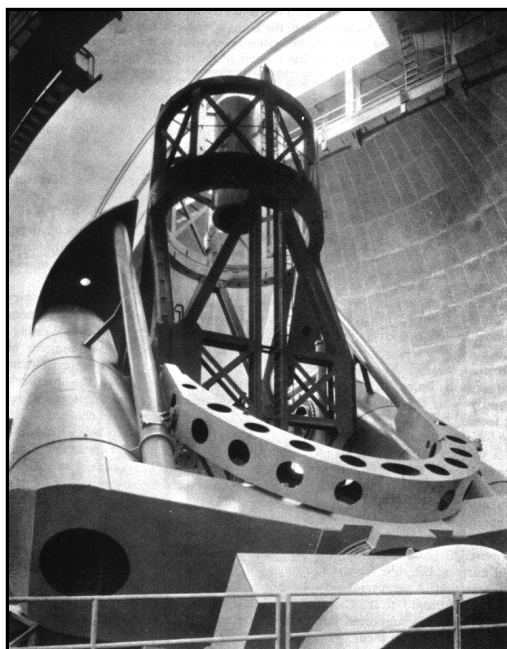
1800	Largest Refractor 6"	Largest Reflector 18"
1850	↓	Silvered Glass
1900	<u>Yerkes 40"</u>	Hooker 100"
1950		Hale 200"
2000		↓


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Hale 5 m Reflector



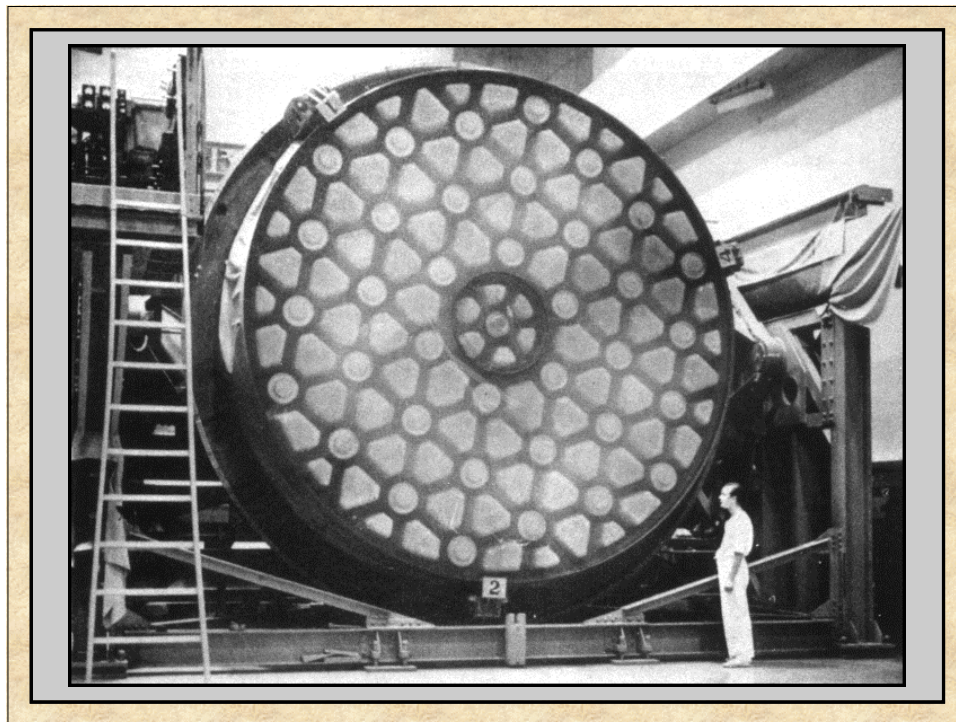
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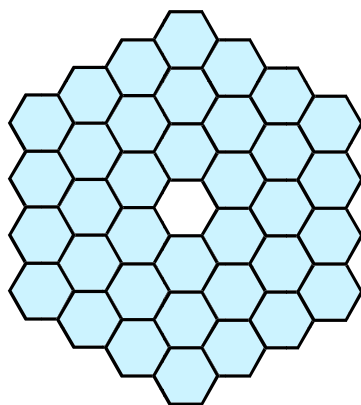
George Hale



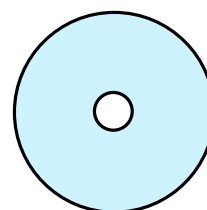
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The New Millennium



Keck 10 m



Hale 5 m



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