

Physics 681: Solar Physics and Instrumentation – Lecture 7

Carsten Denker

NJIT Physics Department
Center for Solar–Terrestrial Research



High-Resolution Telescopes

- Image scale:
 $d = 2fr_{\odot} / A$
- Light-gathering power:
 $\sim (D/f)^2$ extended objects $\sim D^2$ point sources
- Effective focal length
- Long focus vs. short primary focus
- Optical aberrations
- Thermal control
- Scattered light
- Telescope mounts

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Big Bear Solar Observatory



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Domeless "Open" Telescopes

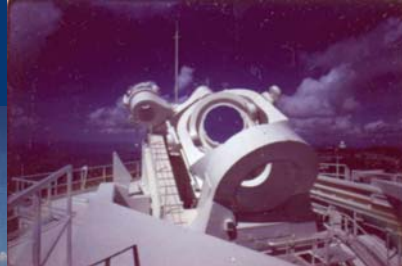


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Heliostat

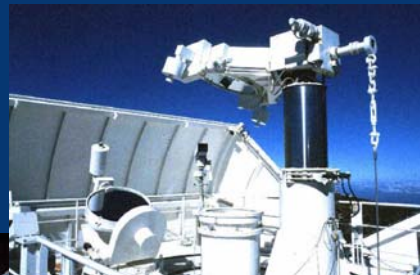


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Coelostats

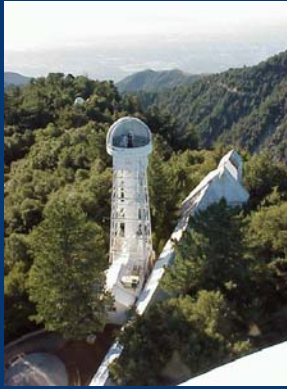


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Tower Telescopes

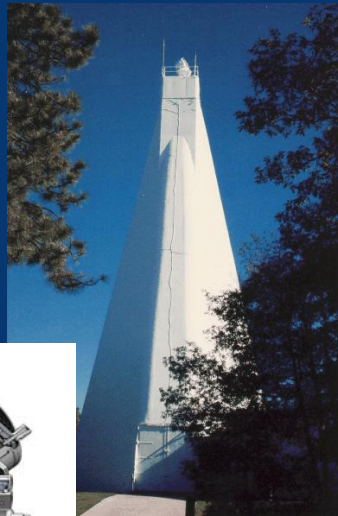
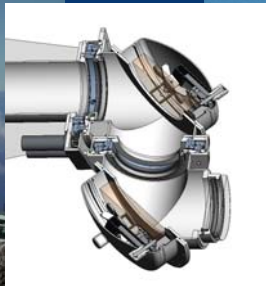


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Turret Telescopes

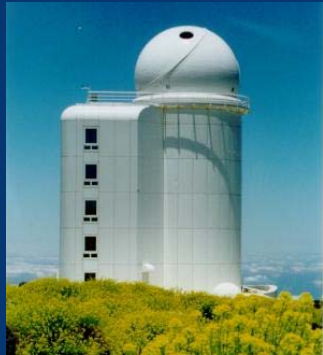


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Variants

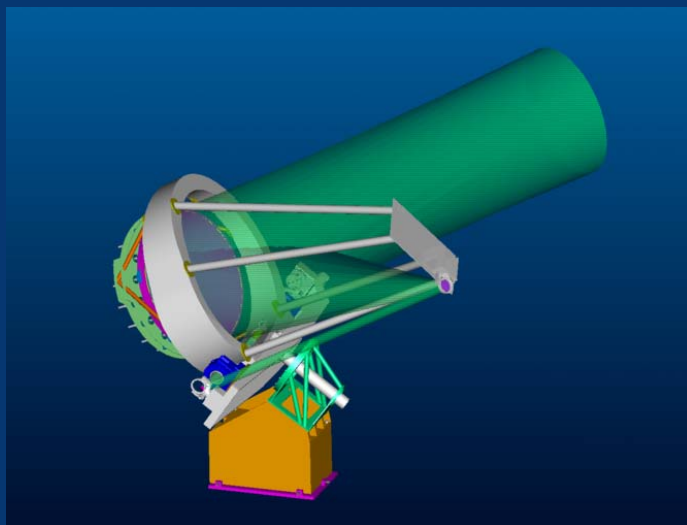


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New Solar Telescope (NST)

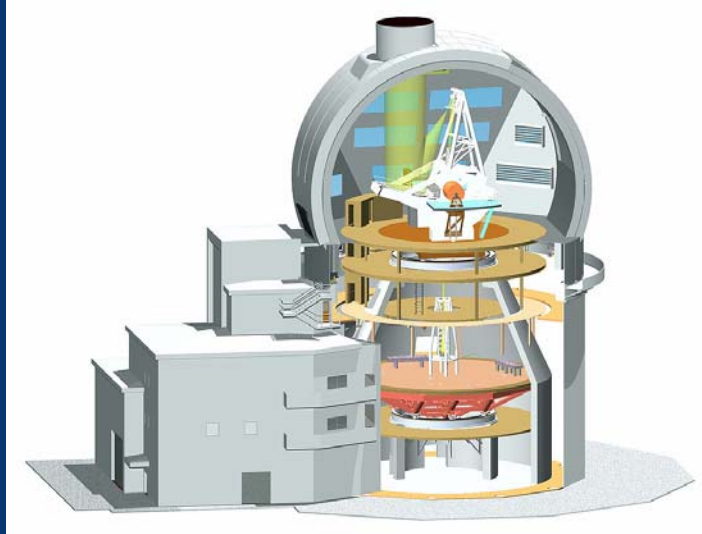


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Advanced Technology Solar Telescope

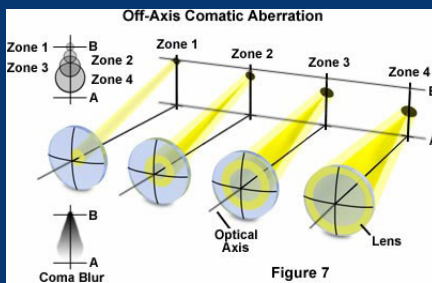
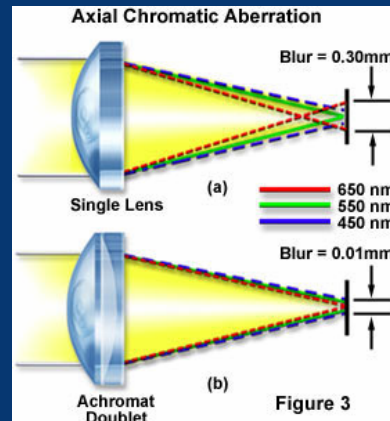
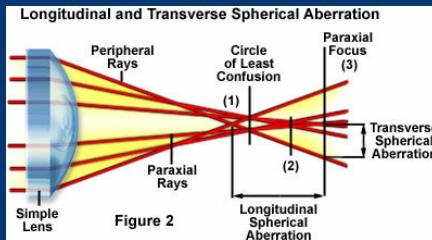


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Optical Aberrations



<http://micro.magnet.fsu.edu/primer/anatomy/aberrations.html>

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