

section3_Ex.5

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(1) What are the arguments for constructing a new generation of very large telescopes?

- CCD
 - more and more area on the sky could be digitally imaged to deeper levels.
- multi-slit devices and optical-fibers
 - the efficiency of the spectroscopy had been improved.
- Quantum limits of sensitivity in detectors and instruments had been reached.
- The only way to gain large factors in efficiency is
 - **to construct even larger ground-based telescope.**
 - to develop methods for counteracting the image-blurring.

(2) Apart from funding, why has it taken so long to consider building telescopes larger than the five meter Hale Telescope on Mt. Palomar?

- The problem is **how the mirrors are made and supported.**
 - gravitational loads
 - the inevitable shape distortions

- segmented mirrors
- meniscus mirrors
- honeycomb mirrors

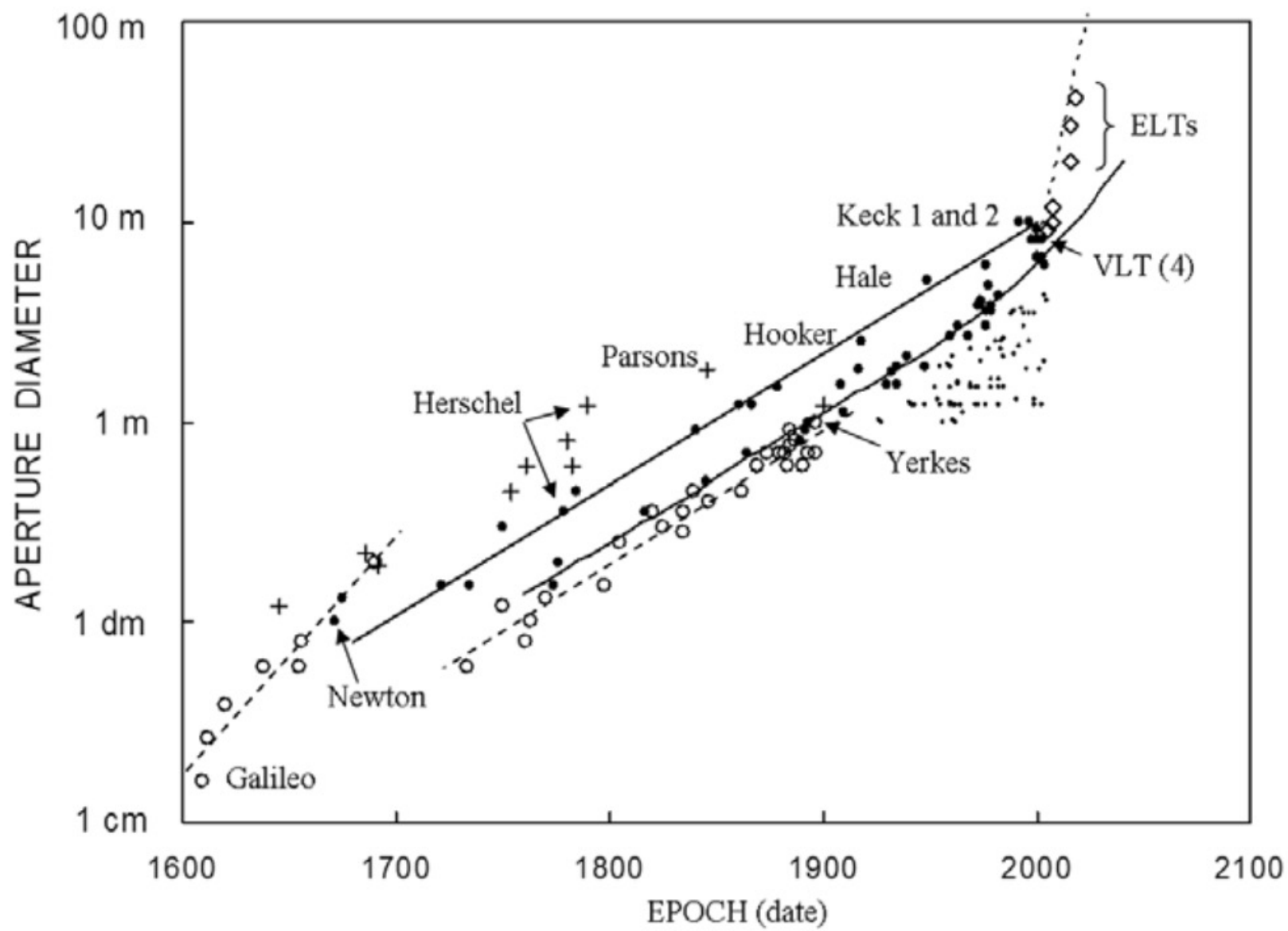


Figure 3.1. The growth of aperture size with time is plotted from the invention of the telescope to present day. Credit: René Racine.