



1608

Danish lens maker Hans Lippershey is credited with making the first telescopes.



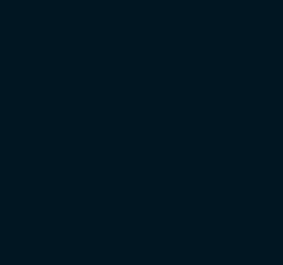
1611

Johannes Kepler proposes advantages of using two convex lenses in a telescope.



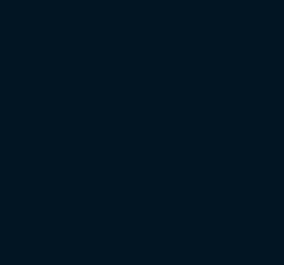
1668

Isaac Newton is credited with building the first practical reflector telescope.



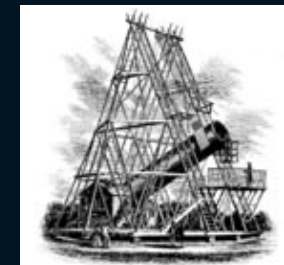
1672

The Cassegrain reflector telescope was designed by Laurent Cassegrain.



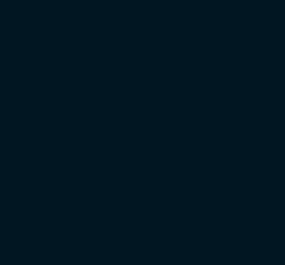
1733

Chester Moore Hall produces the first achromatic lens for a refracting telescope, helping to correct for the different refractive properties of different wavelengths of light.



1789

William Herschel creates the 49 inch reflecting telescope.



1845

Lord Rosse's 72-inch Newtonian reflecting telescope, known as the Leviathan of Parsonstown, was the first to discover the spiral form of galaxies (then known as nebulae).



1888

The Lick Observatory and its 36-inch refractor telescope becomes the first mountaintop observatory.



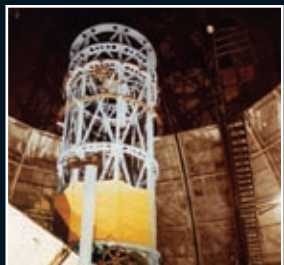
1897

The 40-inch refractor lens for the Yerkes Observatory is developed. It is the largest refractor lens created.



1908

The 60-inch reflector telescope is built atop Mount Wilson near Pasadena, California.



1917

Also atop Mount Wilson, the famous 100-inch Hooker telescope is built. It is with this instrument that Edwin Hubble discovers that the nebulae studied by Lord Rosse are actually separate galaxies, apart from our Milky Way.

1918

The 1.8 meter Plaskett Telescope is commissioned near Victoria, British Columbia.

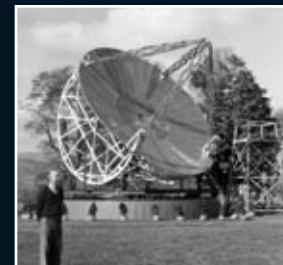
1933

Fritz Zwicky, by analyzing Doppler velocities in the Coma galaxy cluster, proposes the existence of "dark matter" as providing the gravitation force necessary to hold galaxy clusters together.



1933

Karl Jansky discovers radio waves emanating from the center of the Milky Way Galaxy.



1937

Grote Reber built the first radio telescope and used it for the first systematic survey of radio waves from the sky.



1948

The 200-inch Hale reflector at Mount Palomar achieved "first light," becoming the world's premier observatory, and continues to produce important scientific results.



1964

Arno Penzias and Robert Wilson detect the predicted Cosmic Microwave Background Radiation, providing overwhelming support for the Big Bang theory.

1970s

Vera Rubin, working with Kent Ford, finds evidence for dark matter in the unexpectedly high orbital velocity of stars in the outer reaches of spiral galaxies.



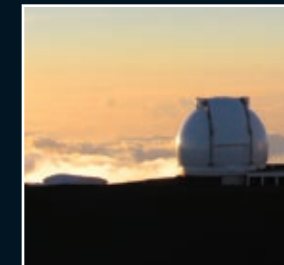
1979

The Canada-France-Hawaii located on Mauna Kea in Hawaii becomes operational.



1990

The Hubble Space Telescope is launched.



1993

The Keck Telescope, which pioneered the segmented mirror design, began scientific observations on Mauna Kea in Hawaii; Keck II began observations in 1996. Jerry Nelson, who pioneered Keck's design, is now the project scientist for the Thirty Meter Telescope.



1998

The European Very Large Telescope array (VLT) achieves first light. The VLT consists of four Unit Telescopes with mirrors 8.2 meters in diameter and four movable 1.8 meter diameter Auxiliary Telescopes.

1998

Two separate groups hunting distant supernovae discovered several that were dimmer than they were supposed to be, suggesting that the expansion of the Universe was accelerating.



1999

The Japanese Subaru telescope begins operations on Mauna Kea.



2000

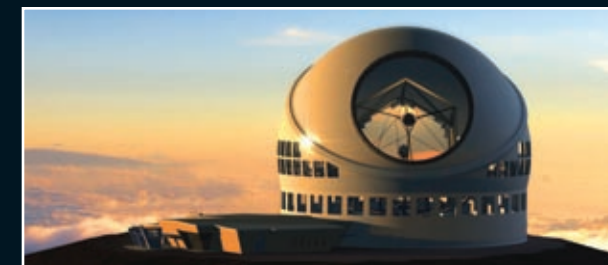
The twin multinational Gemini telescopes, one on Mauna Kea, the other on Cerro Pachón in Chile become operational.

2000

The Astronomy and Astrophysics Survey Committee recommends as its highest priority ground-based initiative for this decade, construction of a 30-meter aperture Giant Segmented Mirror Telescope.

2003

Project partnership among Caltech, the University of California, and the Association of Canadian Universities for Research in Astronomy is created to design and build a 30-meter class, segmented mirror telescope.



2009

TMT completes its design and development phase and moves into early construction.

A BRIEF HISTORY OF ASTRONOMY AND TELESCOPES

