Camera Obscura, Athanasius Kircher, 1646
The first casual reference to the Camera Obscursa is by Aristotle (Problems, ca 330 BC), who questions how the sun can make a circular image when it shines through a square hole. Euclid's Optics (ca 300 BC), presupposes the camera obscura as a demonstration that light travels in straight lines.

Giovanni Battista della Porta's Magica Naturalis (1558) second edition of Magia Naturalis (1591) includes a lens for the camera. This had been suggested earlier by Roger Bacon, and was in use by others in the 16th century. Porta popularized the camera obscura, which was instantly in use with astronomers: Kepler, solar observations, 1600, including the transit of Mercury in 1606; Fabricius, sunspots, 1611.

Kepler coined the term "camera obscura."
illum in tabula per radios Solis, quam in cælo contingit: hoc est, si in cælo superior pars deliquii patiatur, in radiis apparebit inferior deficere, et ratio exiguit optica.

Sols deliquium Anno Christi
1544. Die 24 Januari
Louvain

Sic nos exactè Anno 1544. Louanii eclipse Solis
obseruauimus, inuenimusque; deficere paulò plus q dex-

Camera Obscura, Reinerus Gemma-Frisius, 1544

Source: http://www.acmi.net.au/AIC/CAMERA_OBSCURA.html
Abu Ali Al-hasen Ibn Alhasen, mathematician, born in Basra, d. 1038 Cairo, is the first to show how an image is formed on the eye, using the camera obscura as an analog. Alhazen states (in the Latin translation), and with respect to the camera obscura, "Et nos non inventimus ita", we did not invent this.
Photography – writing with light

There are two distinct scientific processes that combine to make photography possible.

The first of these processes was optical. The Camera Obscura (dark room) had been in existence for at least four hundred years.

The second process was chemical. For hundreds of years before photography was invented, people had been aware, for example, that some colours are bleached in the sun, but they had made little distinction between heat, air and light.

The first successful picture was produced in June/July 1827 by Niépce, using material that hardened on exposure to light. This picture required an exposure of eight hours.

One of Nicéphore Niépce's earliest surviving photographs, circa 1826 (next slide)
Pigeon House and Barn 1827
Niépce agreed to go into partnership with Louis Daguerre. Niépce died only four years later, but Daguerre continued to experiment. Soon he had discovered a way of developing photographic plates, a process which greatly reduced the exposure time from eight hours down to half an hour. He also discovered that an image could be made permanent by immersing it in salt. This was expanded into a process (positive image on a metal support) to be known as the Daguerreotype. A disadvantage of the Daguerreotype was that it was expensive and a 'one shot', each picture was a once-only event – and could not be duplicated (other than with a second camera taking the same shot at the same time).

The Calotype invented by William Henry Fox Talbot, was based on a different process (positive/negative process), printed on paper and could be reproduced.
In 1835 Talbot made pictures on his argentic chloride sodden photosensitive paper with the help of a camera obscura. The first picture he made was of a barred window in his house. The exposure took about an hour. Thus he produced the first negative in the world. He placed another such sheet of paper against the first one and exposed them. In such a way Talbot made a positive imprint.
1845 - Early calotype by Fox Talbot of a man sitting on a garden wall at Lacock Abbey talking to a woman.
Talbot, 1853
In 1851 a new era in photography was introduced by Frederick Scott Archer, who introduced the Collodion process. This process was much faster than conventional methods, reducing exposure times to two or three seconds, thus opening up new horizons in photography.

The next major step forward came in 1871, when Dr. Richard Maddox discovered a way of using Gelatin (which had been discovered only a few years before) instead of glass as a basis for the photographic plate. This led to the development of the dry plate process. Dry plates could be developed much more quickly than with any previous technique.

George Eastman introduced flexible film in 1884. Four years later he introduced the box camera, and photography could now reach a much greater number of people.
Topics in Early Photography

* Architectural photography
* Social record
* Travel photography
* War photography

* Other
View of the battlefield, First Bull Run, Virginia, July 1861
Brandy Station, Va., vicinity. Camp of 18th Pennsylvania Cavalry, 3d Division, Cavalry Corps, 1864 (Library of Congress, Civil War Photographs)
First Xray of a human being
Promontory Point (Utah) 1869
Galloping Horse 1878
Betty Grable 1942
Atomic Bomb on Nagasaki, 1945
Kent State 1970 - Ohio National Guard quells student protests
South of the DMZ 1966
Earthrise 1968
Digital photography
highpass filter

partial differential equation based anisotropic image smoothing
I was sipping my coffee in the Chengdu Starbucks, when I noticed that I was wearing a few real design classics.
Imaging with other modes of perception
Humminbird 797 fishfinder – sonar image
'Seeing' as humans do not see
Translation of laser range finder data of a sofa to gray scale image
Smart bomb view of Fallujah