

## Early Cinema TimeLine

### Pre-19th Century

Ancient knowledge of the phenomenon later termed "persistence of vision" or the continued retention of the image of light in the human brain for a fraction of a second after the physical removal of the stimulus --- first noticed in such mundane "experiments" as whirling a burning stick in darkness and thereby creating the illusion of a continuous stream of light.

Ancient knowledge of image projection using fire/shadows and, later, mirrors. Some cite the dwellers in Plato's *Allegory of the Cave* from *The Republic* as the first movie audience.

Renaissance (esp. Leonardo da Vinci) and later experiments with a "camera obscura" (literally, dark room), which allowed a small ray of light to enter a completely darkened space, thus producing an inverted and reversed image of the scene facing the opening--- origin of the term "camera."

**1727** -- Professor J. Schulze mixes chalk, nitric acid, and silver in a flask; notices darkening on side of flask exposed to sunlight. Accidental creation of the first photo-sensitive compound.

### 19th Century to 1895

**1800** -- Thomas Wedgwood makes "sun pictures" by placing opaque objects on leather treated with silver nitrate; resulting images deteriorated rapidly, however, if displayed under light stronger than from candles.

**1816** -- Nicéphore Niépce combines the camera obscura with photosensitive paper (aka "Heliographs")

**1820's-1860's** --- Development and widespread popularity of persistence of vision based toys, gadgets, and "motion picture" devices (aka "Magic Lanterns"), most famous of which is the "zoetrope."

**1824** -- Presentation of a paper by Peter Mark Roget (of thesaurus fame) to the Royal Society of London scientifically documenting the persistence of vision phenomenon.

**1826/27** -- First still photograph taken, using a glass plate technique Claude Niepce's photograph the *View from a Window at Le Gras* took nearly eight hours to expose.

**1832** -- Joseph Plateau and sons introduce the Phenakistoscope. Like other toys of its kind, the Phenakistoscope was one of the more successful illusion toys. Pictures on one disc viewed through slots in the other, appeared to move when the two were spun and viewed in a mirror.

**1834** -- Henry Fox Talbot creates permanent (negative) images using paper soaked in silver chloride and fixed with a salt solution. Talbot created positive images by contact printing onto another sheet of paper.

**1834** -- Another illusion toy - the Zoetrope was introduced by William George Horner. The Zoetrope used the same principle as Plateau's Phenakistoscope but instead of discs the pictures and slots are combined in a rotating drum. Zoetrope's were widely sold after 1867.

**1837** -- Louis Jacques Mande Daguerre's (former partner of Niépce) invention of the first permanent means for capturing photographic images through the use of a camera --- used silvercoated metal plates which produced photographs known as "daguerrotypes" --- original photographs required subjects to remain stationary for 15 minutes, but the increasing photosensitivity of the plates used in the cameras reduced the posing time to 3 minutes by 1841.

**1839** -- Henry Fox Talbot makes an important advancement in photograph production with the introduction of negatives on paper - as opposed to glass. Also around this time it became possible to print photographic images on glass slides which could be projected using magic lanterns.

**1846** -- Important in the development of motion pictures was the invention of intermittent mechanisms - particularly those used in sewing machines.

**1870's** -- Eadweard Muybridge uses multiple cameras, beginning with 12 and increasing ultimately to 48, to capture photographic images of motion in small incremental units --- most famous experiment involved the photographing of racehorses to prove that at a point in their gallop all four legs are in the air.

**1877** -- Emile Reynaud introduces the Praxinoscope. Similar in design to Horner's Zoetrope, the illusion of movement produced by the Praxinoscope was viewed on mirrors in the centre of the drum rather than through slots on the outside.

**1878** -- Eadweard Muybridge achieves success after five years of trying to capture movement. Muybridge was asked, in 1873, by the ex-governor of California - Leland Stanford to settle a bet as to whether horses hooves left the ground when they galloped. He did this by setting up a bank of twelve cameras with trip-wires connected to their shutters, each camera took a picture when the horse tripped its wire. Muybridge developed a projector to present his finding. He adapted Horner's Zoetrope to produce his Zoopraxinoscope.

**1882-1883** -- Etienne Jules Marey, inspired by Muybridge's animal locomotion studies, begins his own experiments to study the flight of birds and other rapid animal movements . The result was a photographic gun which exposed 12 images on the edge of a circular plate.

**1882** -- Emile Reynaud expands on his praxinoscope and using mirrors and a lantern is about to project moving drawings onto a screen.

**1889** -- Eastman Company announces development of celluloid film.

**1891** -- Edison patents kinetograph camera and kinoscope viewer --- earliest films (like Fred Ott's Sneeze) are shot.

**1892** -- Using his projecting Praxinoscope, Reynaud holds the first public exhibitions of motion pictures. Reynaud's device was successful, using long strips of hand-painted frames, but the effect was jerky and slow.

**1893** -- Edison and Dickson build a studio on the grounds of Edison's laboratories in New Jersey, to produce films for their kinoscope. The Black Maria was ready for film production at the end of January.

**1894** -- The Lumière family is the biggest manufacturer of photographic plates in Europe. A local kinoscope exhibitor asks brothers Louis and Auguste to make films which are cheaper than the ones sold by Edison.

Louis and Auguste design a camera which serves as both a recording device and a projecting device. They call it the "Cinématographe".

The "Cinématographe" uses flexible film cut into 35mm wide strips and used an intermittent mechanism modeled on the sewing machine.

The camera shot films at sixteen frames per second (rather than the forty six which Edison used), this became the standard film rate for nearly 25 years.

### **1895 - 1915 -- Birth of an Art**

**1895** -- Lumiere Brothers patent the "cinématographe," a combination motion picture camera, projector, and printer.

The first film shot with the "Cinématographe" camera is *La Sortie de l'usine Lumière a Lyon* (Workers leaving the Lumière factory at Lyon). Shot in March it is shown in public at a meeting of the Societe d'Encouragement a l'industrie Nationale in Paris that same month.

Later this year they exhibit some of their early films to the first paying audience at the Grand Café in Paris. This is one of the most famous film screenings in history, December 28th, 1895. The venue was the Grand Cafe in Paris and customers paid one Franc for a twenty-five minute programme of ten Lumière films. These included *Feeding the Baby*, *The Waterer Watered* and *A View of the Sea*.

**1896** -- The Lumière brothers sent a representative from their company to London and started a successful run of Cinématographe films.

**1897** -- By 1897 the American Mutoscope Company become the most popular film company in America - both projecting films and with the peephole Mutoscope which was considered more reliable than the kinoscope.

**1899** -- The American Mutoscope Company changes its name to the American Mutoscope and Biograph Company to include its projection and peepshow devices.

**1900** -- British filmmaker James Williamson produces "The Big Swallow" which demonstrated the ingenuity of the Brighton School (of filmmakers) of which he and George Smith were principle contributors.

**1902** -- Georges Méliès shows *A Trip to the Moon* , a 10 minute (one reel) tongue-in-cheek rendition of Jules Verne. The film used innovative special effect techniques (i.e. stop-motion, artificial sets) and introduced color to the screen through hand-painting and tinting.

**1903** -- Edwin S. Porter, working for Edison makes *The Life of an American Fireman* which displayed new visual storytelling techniques and incorporated stock footage with Porter's own photography. It acted as a major precursor to Porter's most famous film *The Great Train Robbery* , a groundbreaking one-reeler, considered by many to be the first satisfying American narrative film. Innovations:

- used editing to show actions happening simultaneously (crosscutting)
- introduced movement of camera (roof of train)
- had characters moving toward and away from camera
- continuity of story preserved through editing despite leaps in time and space
- in an "epilogue" used dramatic closeup to involve audience, breaking the "4<sup>th</sup> wall"

**1903** -- The American Mutoscope and Biograph Company begin making films in the 35mm format rather than the 70mm which boosted their sales. The company went on to employ one of the most important silent film directors - D.W Griffith in 1908.

Compiled by  
Stephen W. DaVega  
Chair, Multimedia Arts and Technologies  
Santa Barbara City College