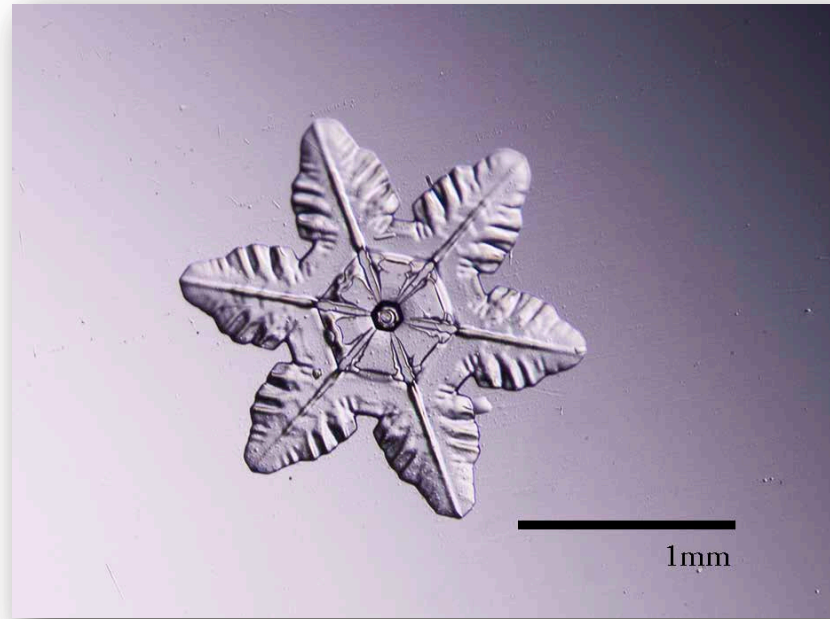
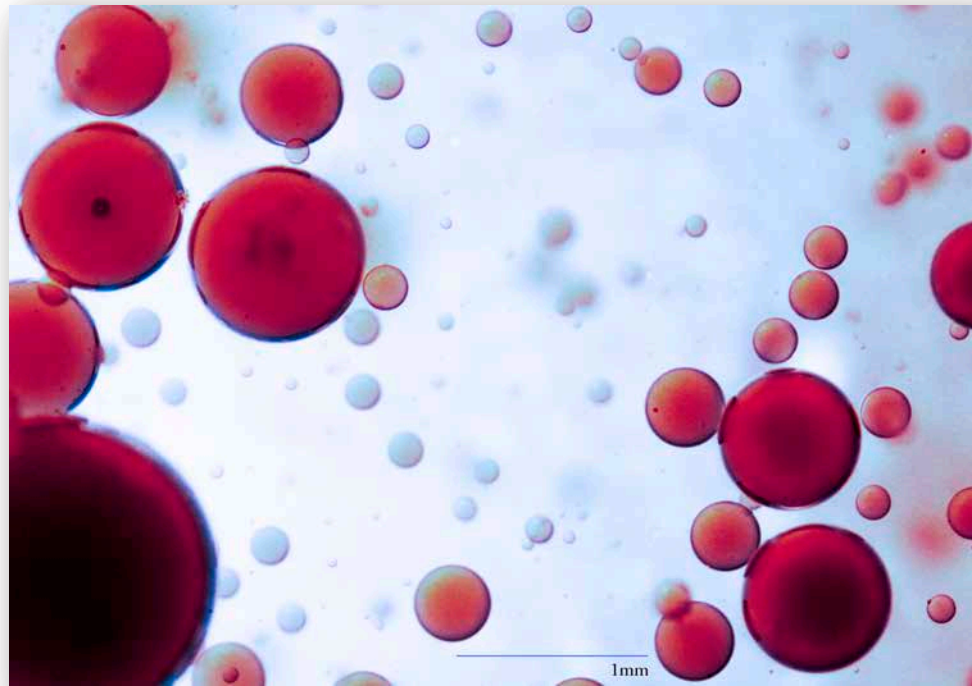


Applications Science Photo II



New this semester... 😊

Unit one and Unit two



Light Microscopy &
Imaging & Photography

Unit 1

http://mrppph.cias.rit.edu/PHPS_202.html

professor michael r peres

This semester is dedicated to *Michael Davidson 1950-2015*

HUFFPOST ARTS & CULTURE

Edison, US

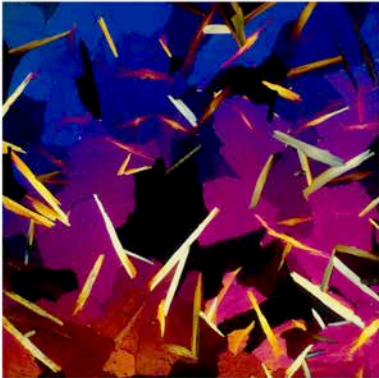
HOME PAGE ENTERTAINMENT ARTS BOOKS TV SCIENCE STYLE HOME ALL SECTIONS

2.1 K **How Researcher Michael Davidson Discovered The Beauty Of Alcohol**

By Allison Davis 12/14 pm ET

In the 1990s, Michael Davidson used a high-powered microscope at the Florida State Research Foundation to photograph your favorite beverages and cocktails. Who knew that alcohol could be so incredibly beautiful?

We have been assured that the images have not been retouched and the crystalized drinks on the microscope slides haven't been dyed, which we admit is a little unbelievable, considering the vivid colors of the images below. It's all in the cross-polarized light microscope, which refracts light through the crystal, creating a mixture of gorgeous colors.



192

HOME DECORATORS COLLECTION EXCLUSIVE TRADIAN VARIETY COMBO \$299 Compare at \$637

FOLLOW HUFFPOST

HuffPost 1.5M

Arts 1.2M

HUFFPOST NEWSLETTERS

Get top stories and blog posts emailed to me each day. Newsletters may offer personalized content or advertisements. Learn More

allison.davis@huffpost.com

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

Is there a difference between
Imaging and Photography?

Course Objectives:

- To enhance and broaden your knowledge in the application of imaging and its related technology used in science.
- To enable development in gaining more experience in choosing and properly operating various scientific imaging equipment
- To produce highly precise scientific images (data) of objects

Course Objectives:

- To further develop visual and oral communication skills specific to applications of imaging to science
- To further develop professional practices
- To further develop writing, planning and personal time management skills

Experiential Learning

Two Exams

Five Photographic Assignments

Entries to the Science_Photo_ Lab_ Notebook

Unit one - 50% of the semester grade

Course Objective

Develop Analytical Technical Skills

Course will have a Technology component

Course will have a Solving Problem &
Thinking Component

Course will have a Communication component

PHPS202_Classnotes

Just another WordPress site

A virtual class notebook

January 26, 2016

1 Comment

Welcome to the Applications of Scientific Photography Class Blog. We created this account to allow students in this class to share their work and the new things they are learning this semester studying light microscopy. This spring semester there are 22 students in the class. Each student will publish three entries to this Blog by mid March. Their first post is due no later than February 5, 2016. It will feature a science image or maker that they found particularly interesting. They must gain permission from creator of the photograph before they can use it on the site. We hope you will enjoy this new class activity.

Michael Peres & Bob Rose





RECENT POSTS

- [A virtual class notebook](#)

RECENT COMMENTS

- [Mr WordPress](#) on [A virtual class notebook](#)

ARCHIVES

- [January 2016](#)

CATEGORIES

- [Uncategorized](#)

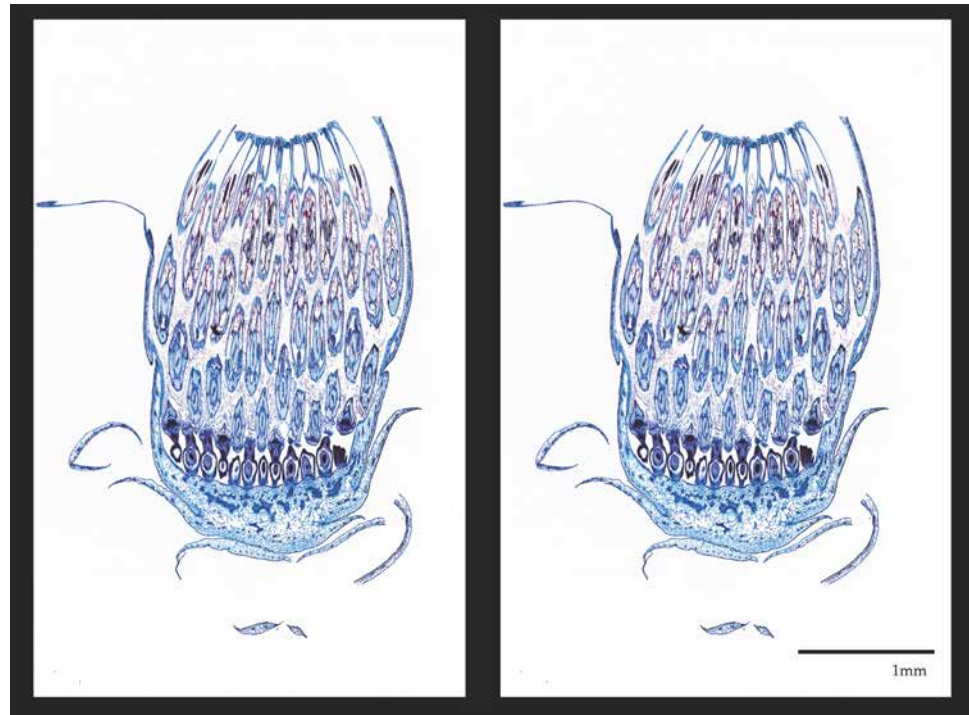
Defining a Science Image

Good and Bad

A picture is better than no picture



Use of Scales



Other criteria

Treatment of Subject

Background

Neutral point of view

No amplification of features

A brief history of important scientific

photographs,
inventors

&

technology

Antonie Philips van Leeuwenhoek mid1600's



Robert Hooke 1665







By the Council of the ROYAL SOCIETY
of London for Improving of Natural
Knowledge.

Ordered, That the Book written by Robert Hooke, M. A. Fellow of this
Society, Entituled, Micrographia, or some Physiological Descriptions of
Minute Bodies, made by Magnifying Glasses, with Observations and
Inquiries thereupon, Be Printed by John Martyn, and James Allestry,
Printers to the said Society.

Novem. 23.
1664.

BROUNCKER. P. R. S.



MICROGRAPHIA:

OR SOME
Physiological Descriptions

OF
MINUTE BODIES

MADE BY
MAGNIFYING GLASSES.

WITH
OBSERVATIONS and INQUIRIES thereupon.

By R. HOOKE, Fellow of the ROYAL SOCIETY.

*Non posse oculo quantum contendere Linceus,
Non tamen idcirco contentosnas Lippus inungi. Horat. Ep. Lib. 1.*



LONDON, Printed for James Allestry, Printer to the ROYAL
SOCIETY, and are to be sold at his Shop, at the Rose and
Crown in Duck-Lane. MDCCLXVII.

Most Inventors

Amateur Scientists

Passion

Drive

Tenacious

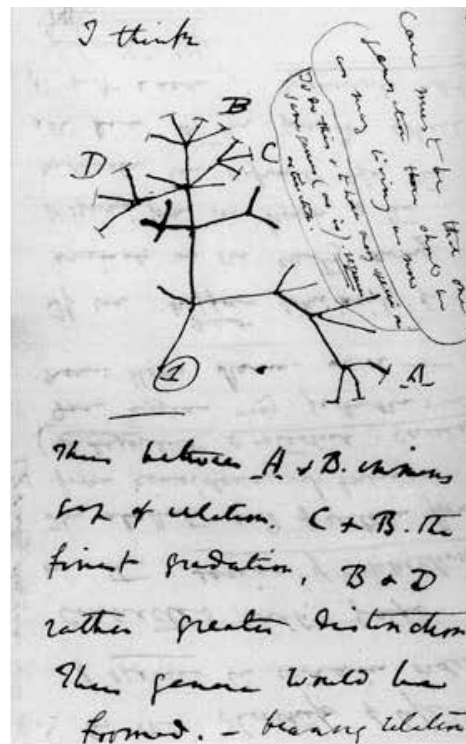
Curious

Materials & Tools

Resourceful

Thirst for Knowledge

Charles Darwin - 1823



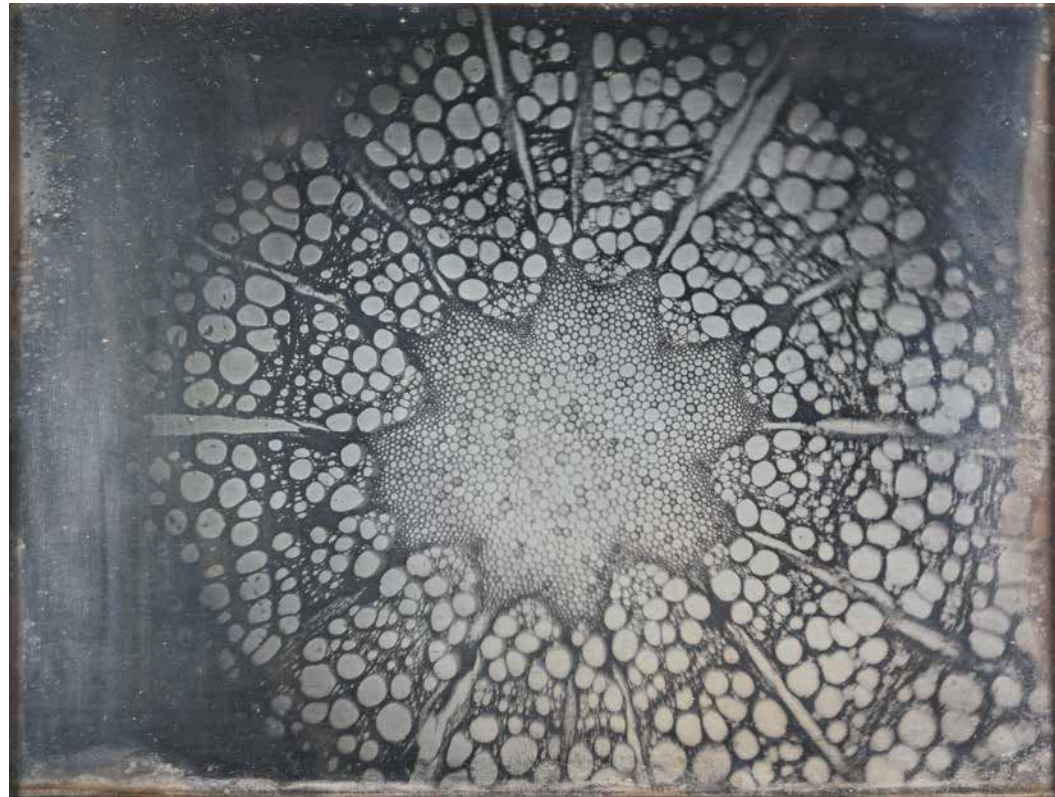
Joseph Nicephore Niepce – ca.1840
the first permanent photograph called a heliograph



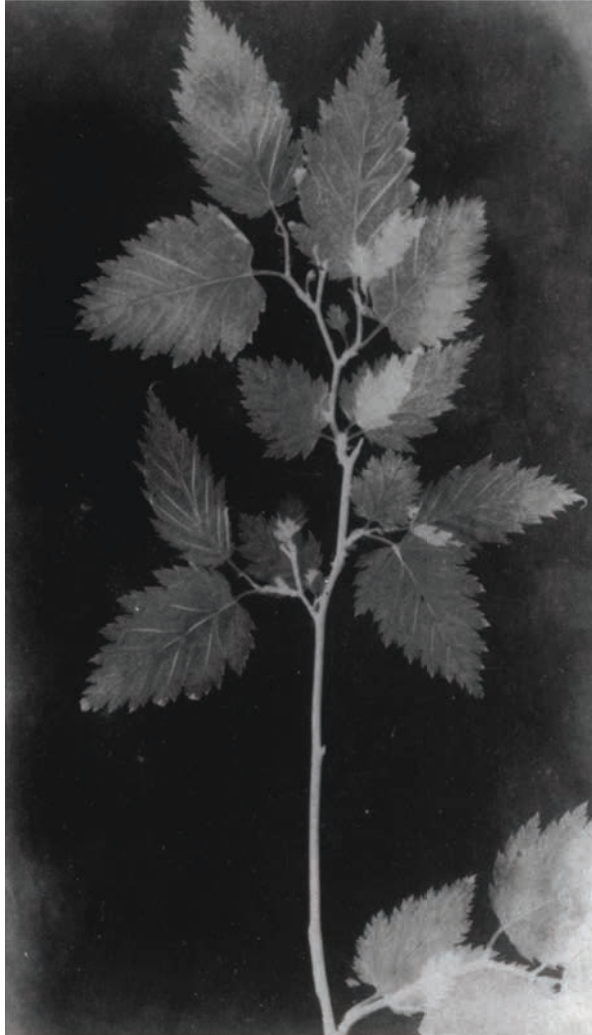
Birthday March 7, 1765

Louis-Jacques-Mandé Daguerre

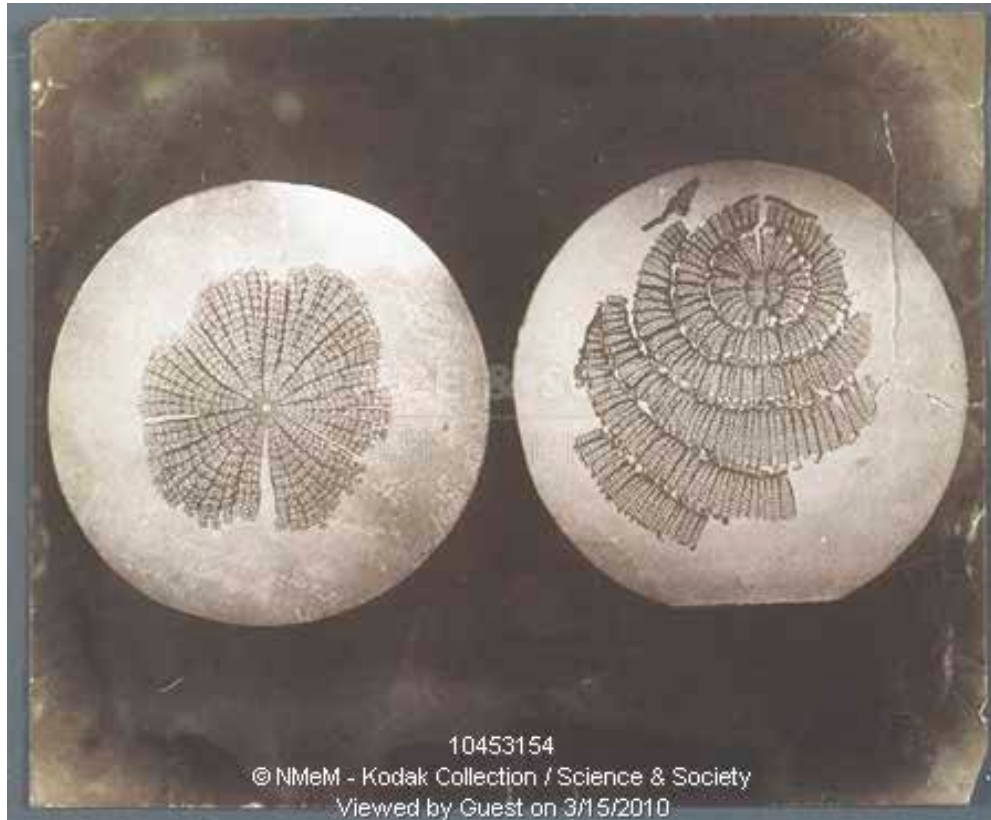
Austrian physicist
Andreas Ritter von Ettinghausen's daguerreotype
Cross-section of Clematis stem
March 4, 1840



William Henry Fox Talbot



W. Fox Talbot



10453154

© NMeM - Kodak Collection / Science & Society

Viewed by Guest on 3/15/2010

Wood slices

Sir John Herschel Invented the Cyanotype

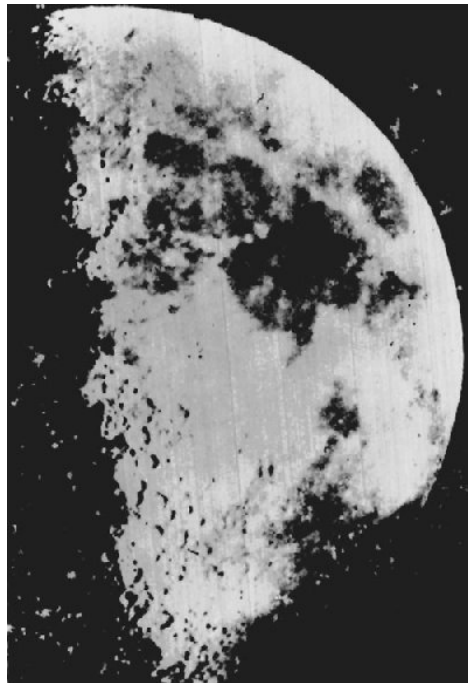
Anna Atkins, Ph.D 1843

published first scientific book to include photographs

Anna Atkins, Ph.D

1843

First astronomical photograph

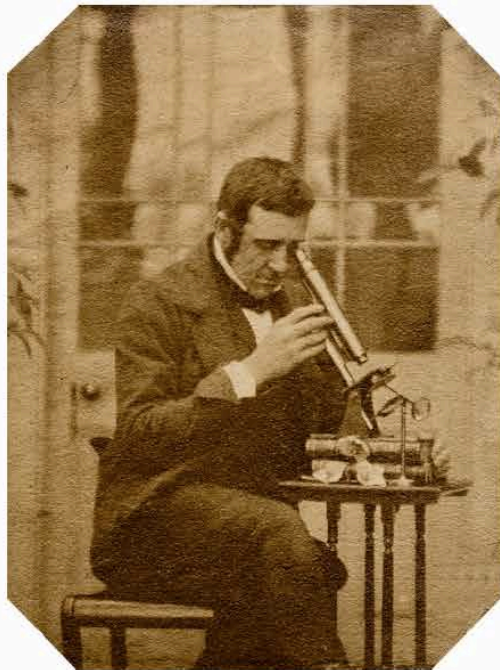


Earliest known photograph of the Moon
a daguerreotype taken in 1840
John Adams Whipple



FIG. 1 Boston in 1860. The first surviving aerial photograph. It was made from a tethered balloon by James Wallace Black. (Courtesy Boston Public Library, Boston, MA.)

First Snowflake photomicrograph

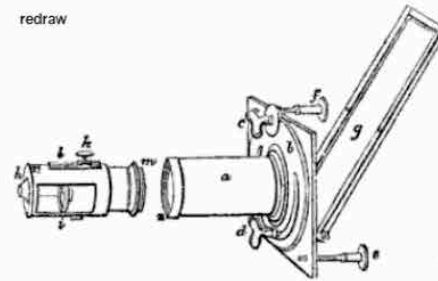


John Dillwyn Llewelyn
c.1853

by Mr. (.....) the (.....) beginning of the year 1854.
Another is more specific about the date: Jan 1854.

Mr. ? The owner, perhaps, of the solar microscope? It is possible that here, as often, Llewelyn drew in a collaborator.

redraw

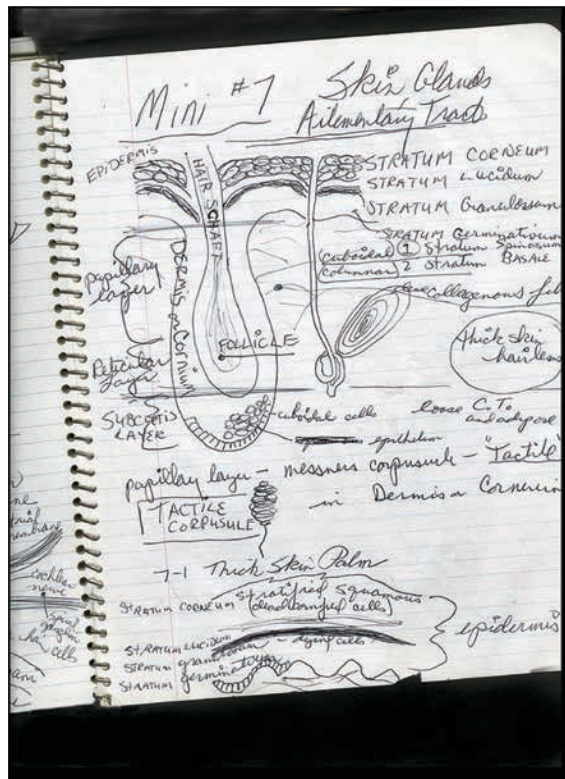


diagrammatic representation of a
solar microscope after an 1835 illustration.
g is the reflecting mirror

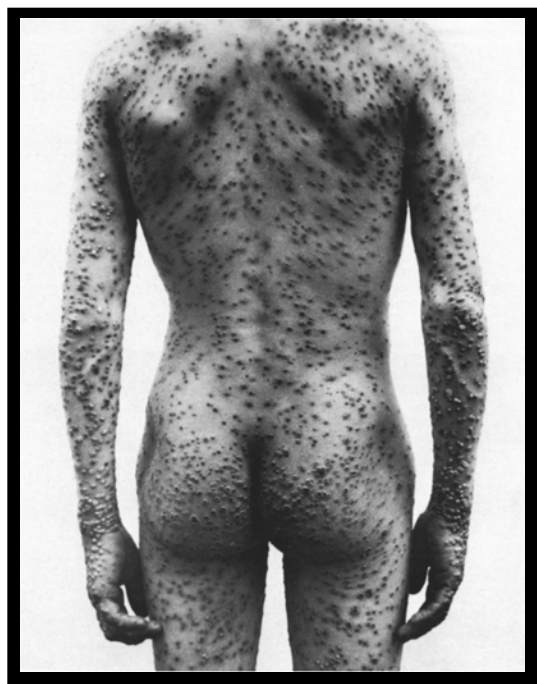
On close examination these images of snow crystals, on the surface so beautifully simple, turn out to engage us in a conundrum—the denial of conventional notions of negative and positive. Snow being white, the positive images ought to be white. However, since the negative created is that of the projected shadow of the crystals, it is the unexposed part of the paper that, remaining white, conveys the sense of the positive. A print from the negative would produce black snow crystals, surely the Devil's work.

Scientific photography

Creates a p r e c i s i o n that words cannot



Photographs, “Remembers what the mind will forget”



Dr. Jon Lightman, 1907
small pox

“Photography describes what words cannot.”

blue

“Makes the invisible”

visible

“Scientific Imaging *requires* Scientific Methods”

Repeatability

Precision

Accuracy

Standardized & Accepted Industry Practices

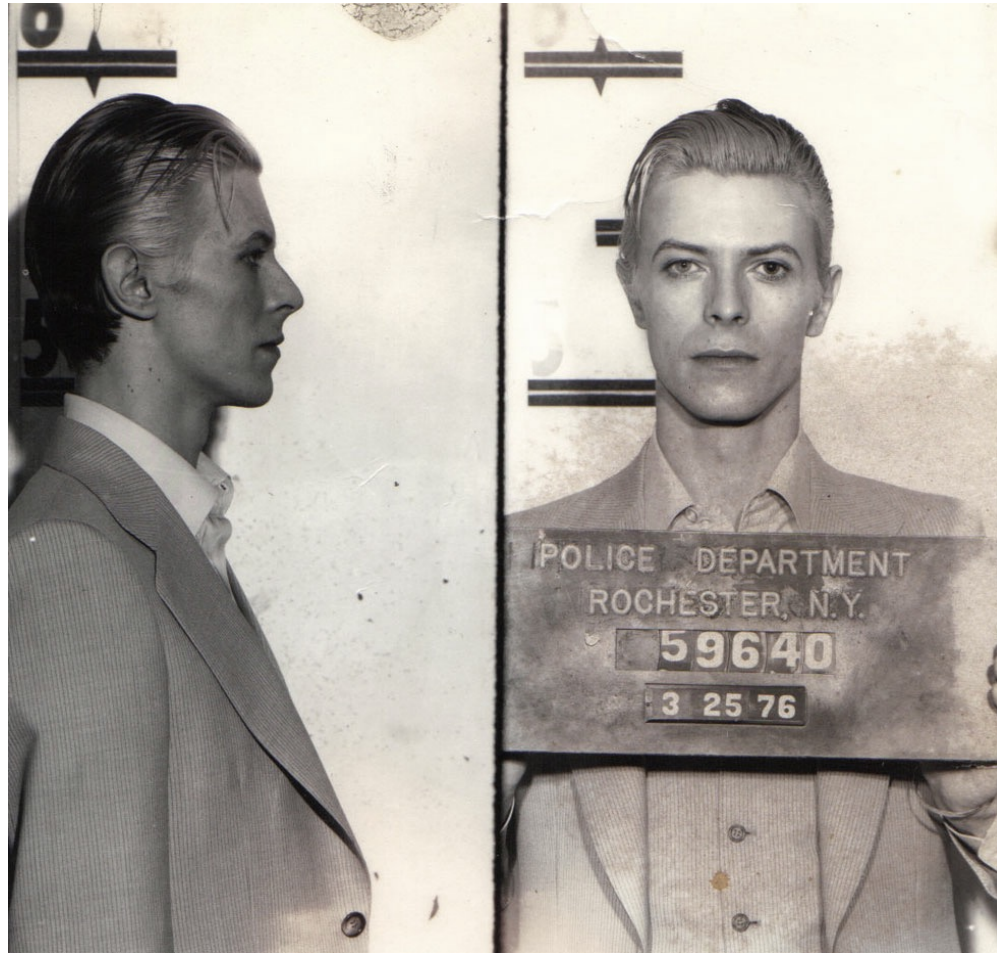
Proper use of scales

Image processing is ethical

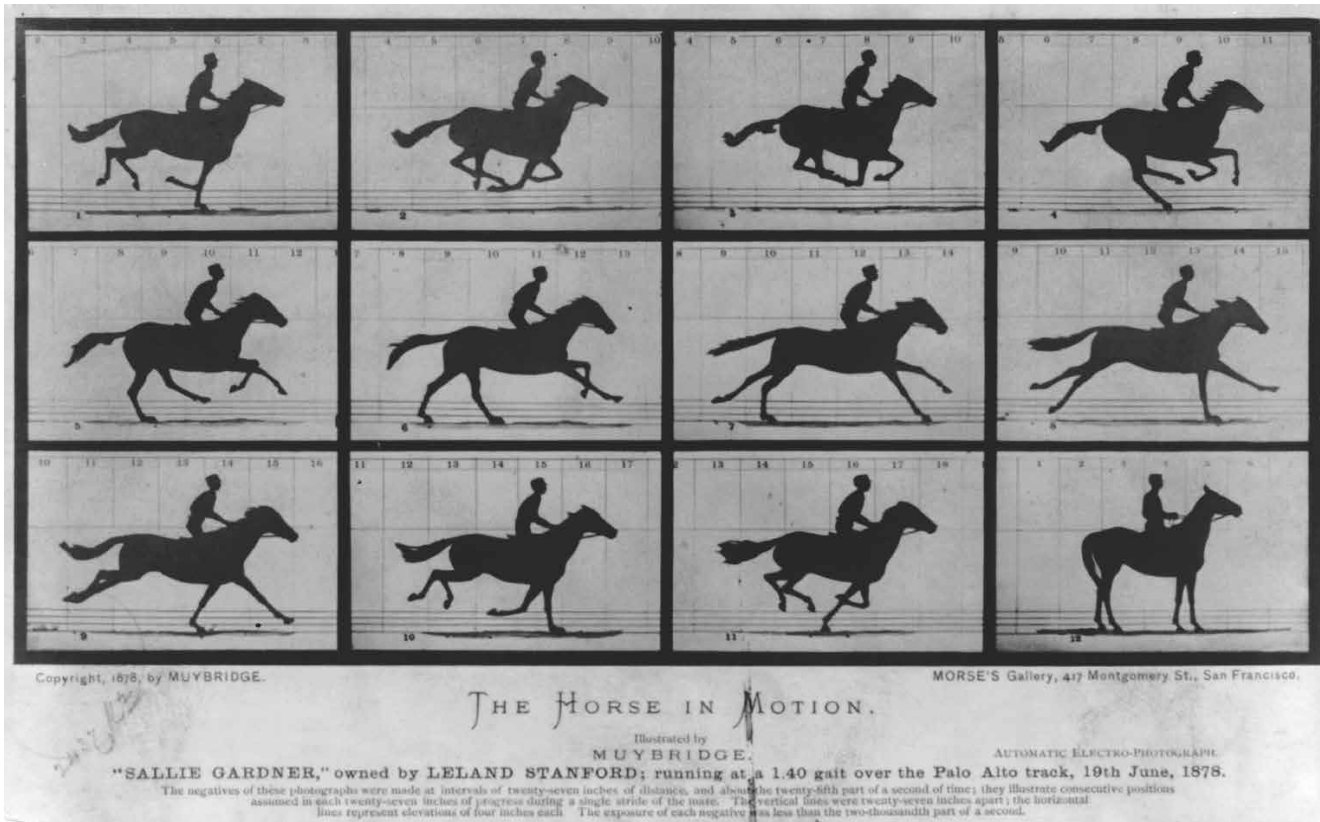


Father of standardized procedures

Alphonse Bertillon, Paris ca 1890



Eadward Muybridge 1887



It's a Process,
sometimes called the Imaging Chain

- 1- See & Evaluate
- 2- Form an Image
- 3- Imaging
- 4- Process
- 5- Display/Use/Distribute
- 6- Archive

Objective - Subjective



Aerial Image and Perception

