

DAGUERRE: REPLICATION, REVELATIONS, REVISIONS



PhD DeMontfort - The Techniques and Material Aesthetics of the Daguerreotype

1842



Joseph-Philibert Girault de Prangey
Christie's sale May 18, 2004, Lot 9

1850



Jean B. L. Gros
Canadian Centre for Architecture collection

DAGUERRE: REPLICATION, REVELATIONS, REVISIONS

Replications serve to interpret historical daguerreotypes

Replications serve to inform historical texts when images no longer exist

Replications serve the preservation and care of historical daguerreotypes

INTERPRETING HISTORICAL DAGUERREOTYPES

early 1840S



Louis-Jacques-Mandé Daguerre



Joseph-Philibert Girault de Prangey

INTERPRETING HISTORICAL DAGUERREOTYPES

1839



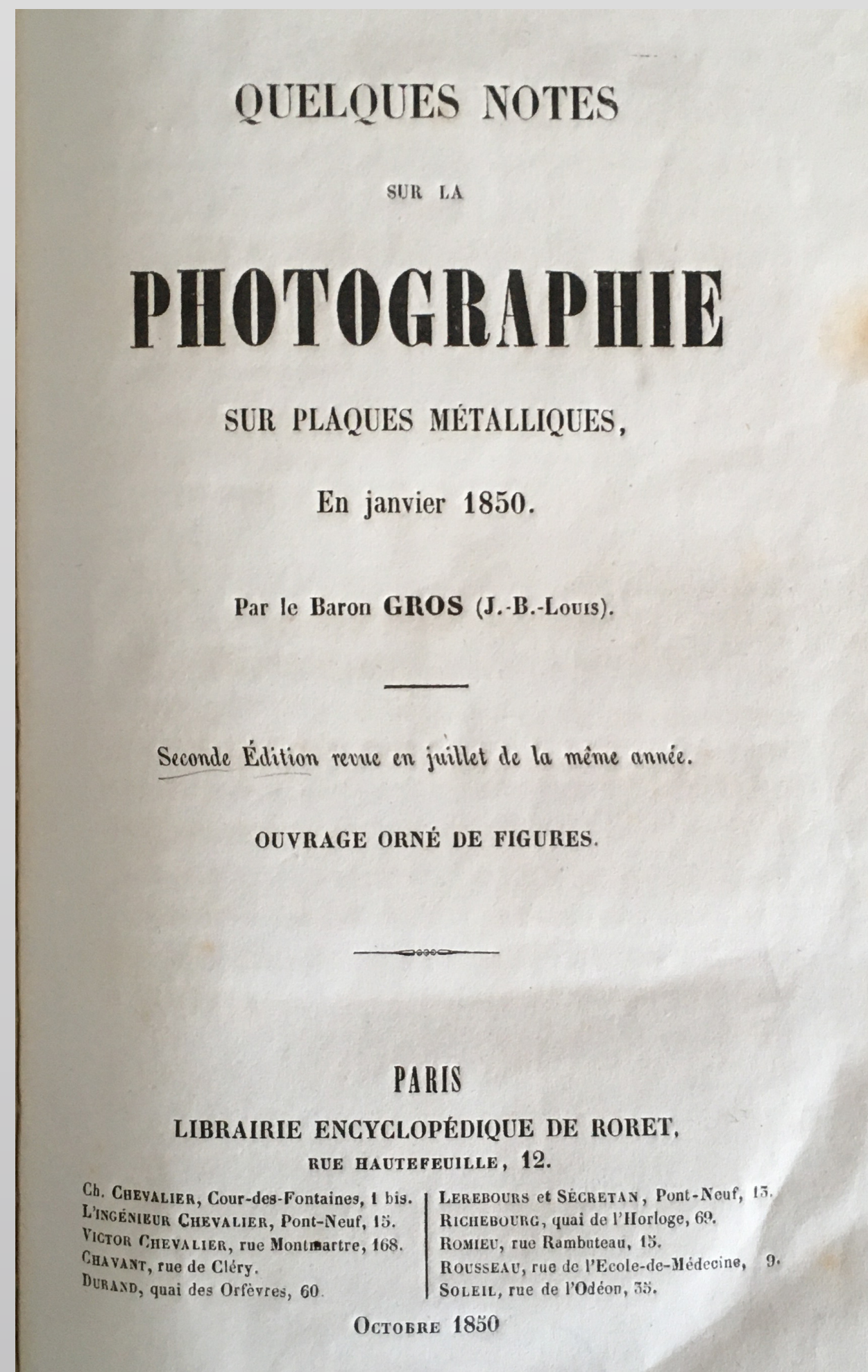
Daguerre 1839



Robinson 2015

Replicating Daguerre's public demonstration in September 1839. Daguerre completed his entire process in 72 minutes. Total elapsed time for me was 85 minutes.

INTERPRETING HISTORICAL DAGUERREOTYPES

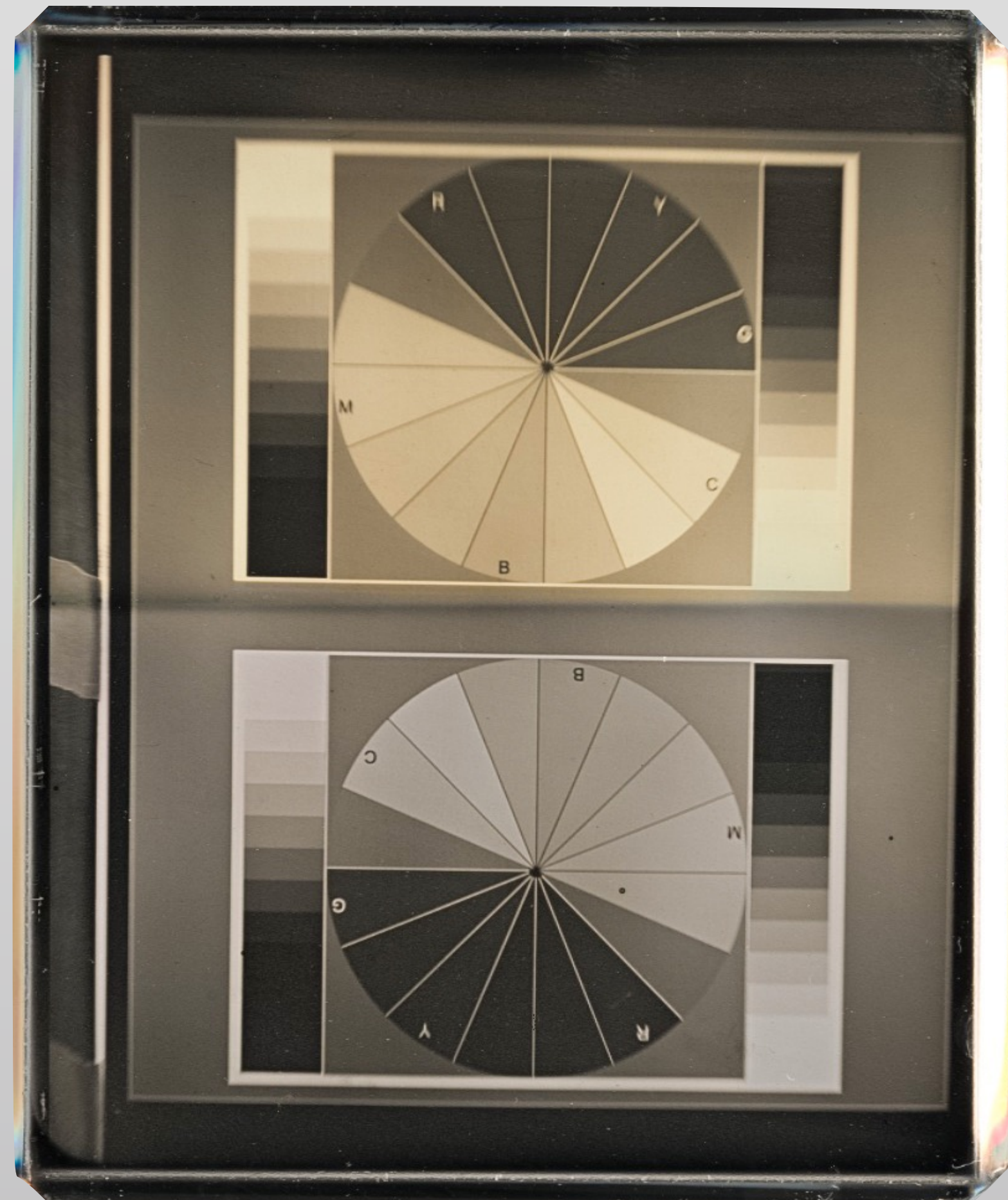


1850



Baron Gros

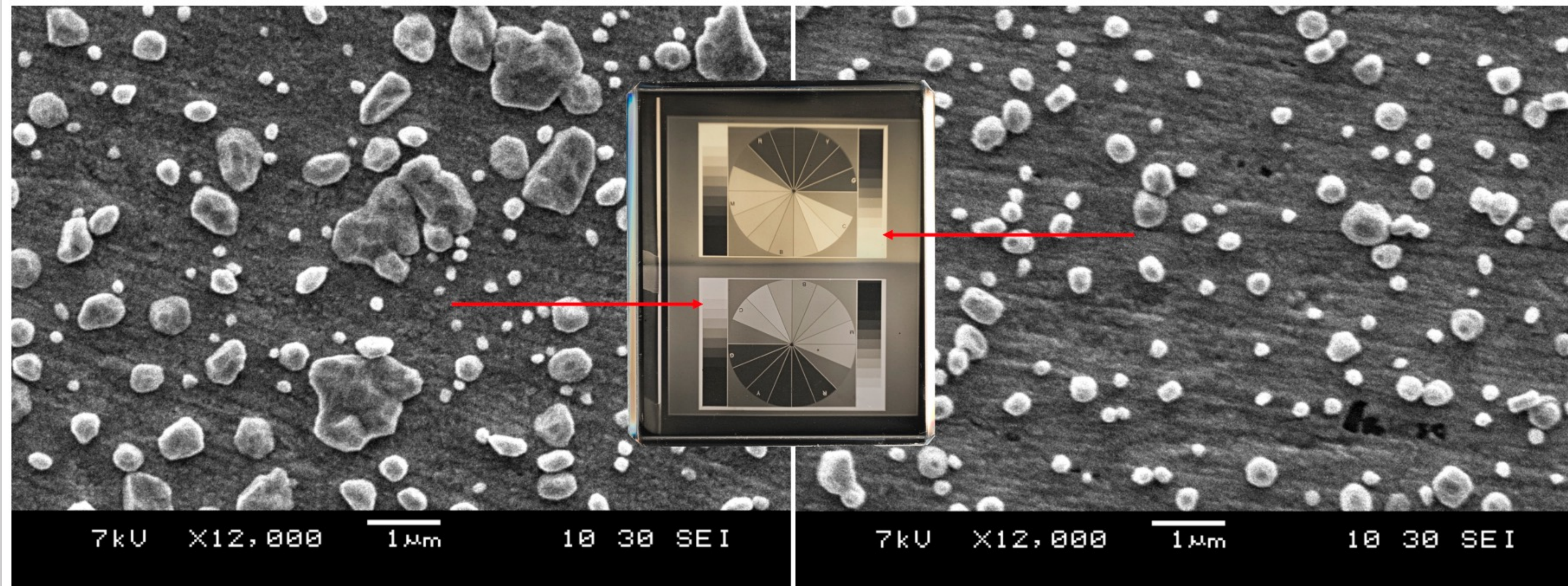
INTERPRETING HISTORICAL DAGUERREOTYPES



Mercury Development
With Ether

Standard Mercury Development

INTERPRETING HISTORICAL DAGUERREOTYPES



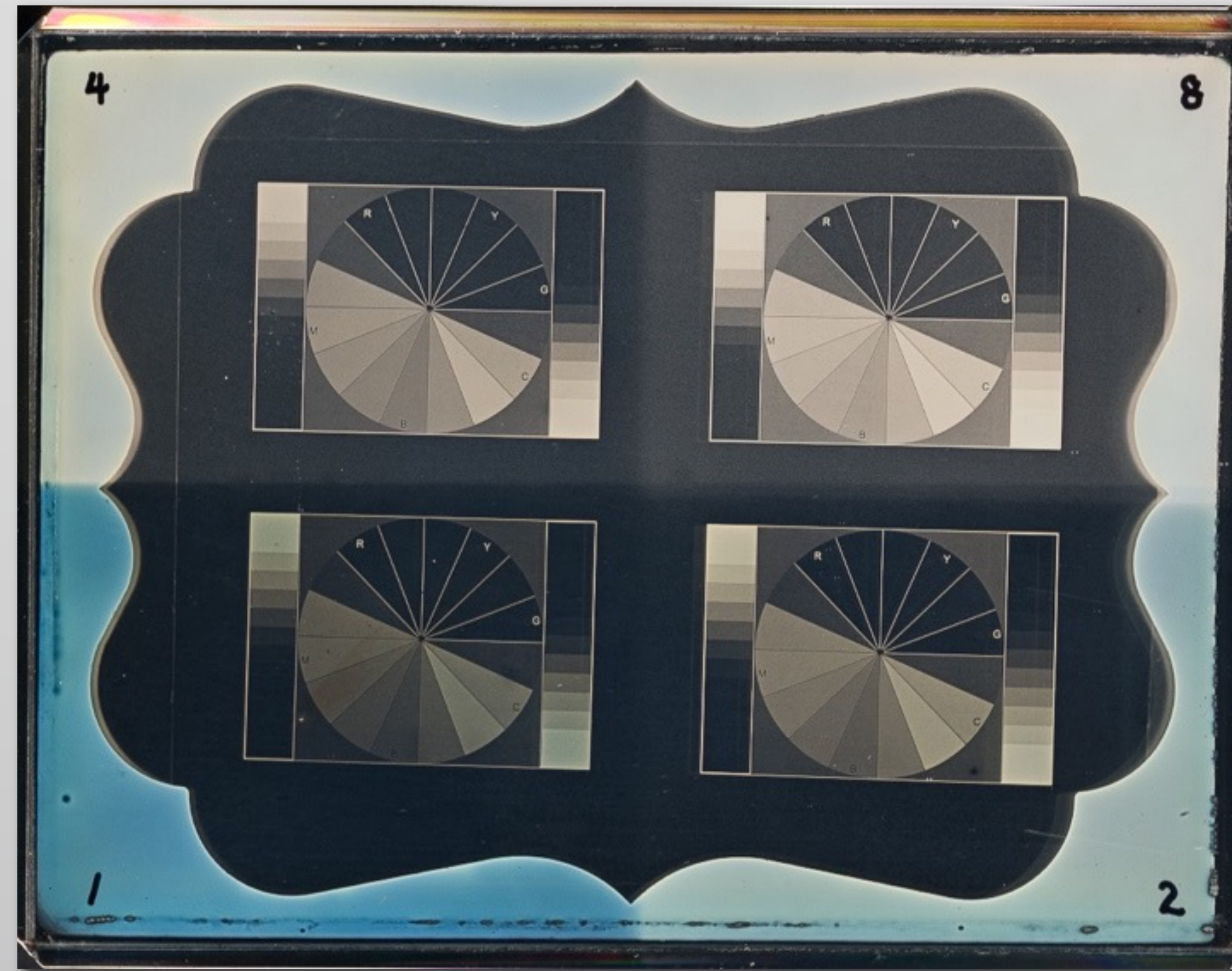
Hg

Hg + ether

INTERPRETING HISTORICAL DAGUERREOTYPES

Hg - 4 min @ 177°F

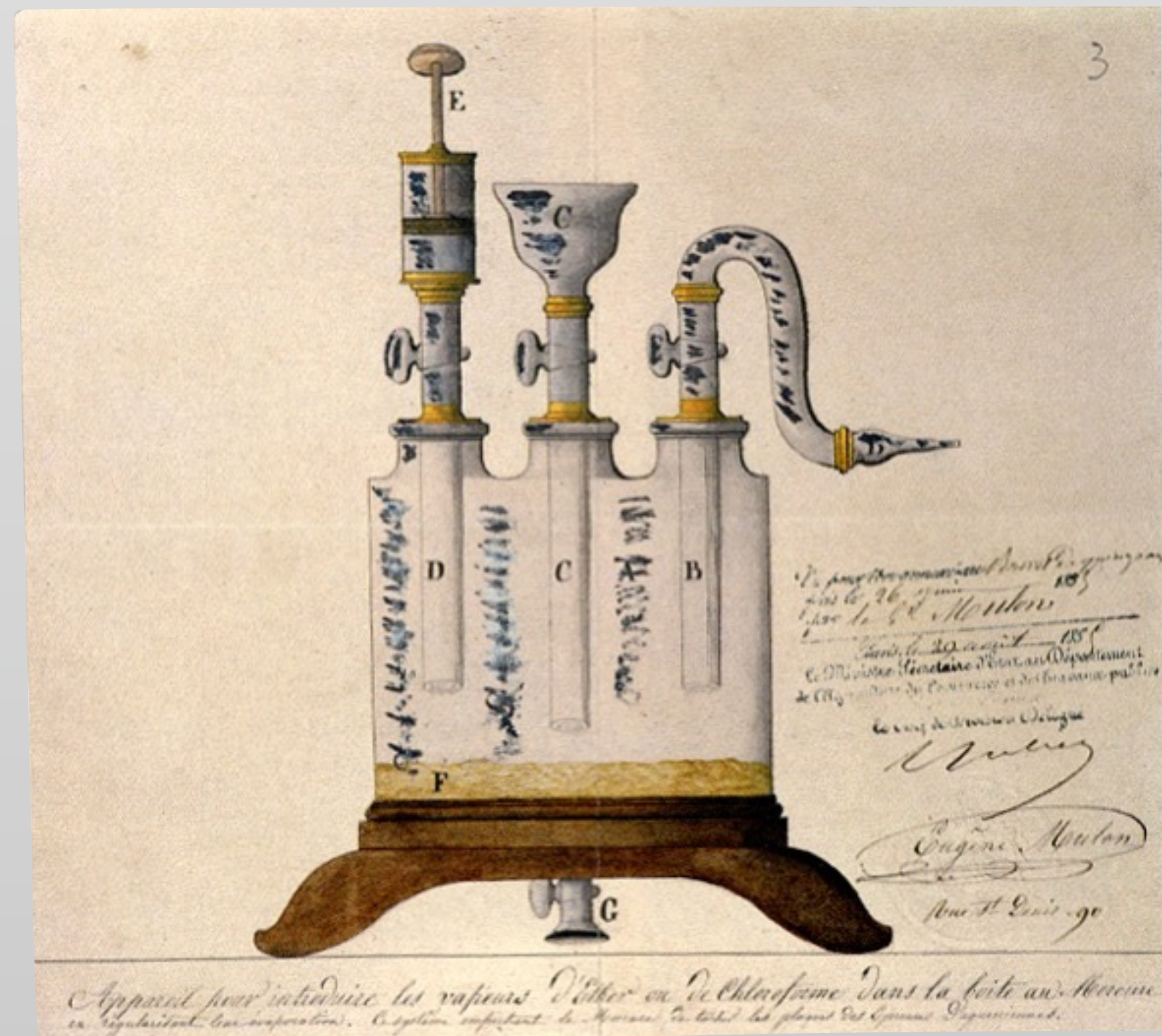
Hg - 8 min @ 177°F



Hg - 1 min @ 177°F

Hg - 2 min @ 177°F

INTERPRETING HISTORICAL DAGUERREOTYPES



Eugène Mulon, French patent for introducing ether to the mercury apparatus 1855



Cyrus and Hippolyte Macaire ca 1852
Port du Havre - private collection

INTERPRETING HISTORICAL DAGUERREOTYPES



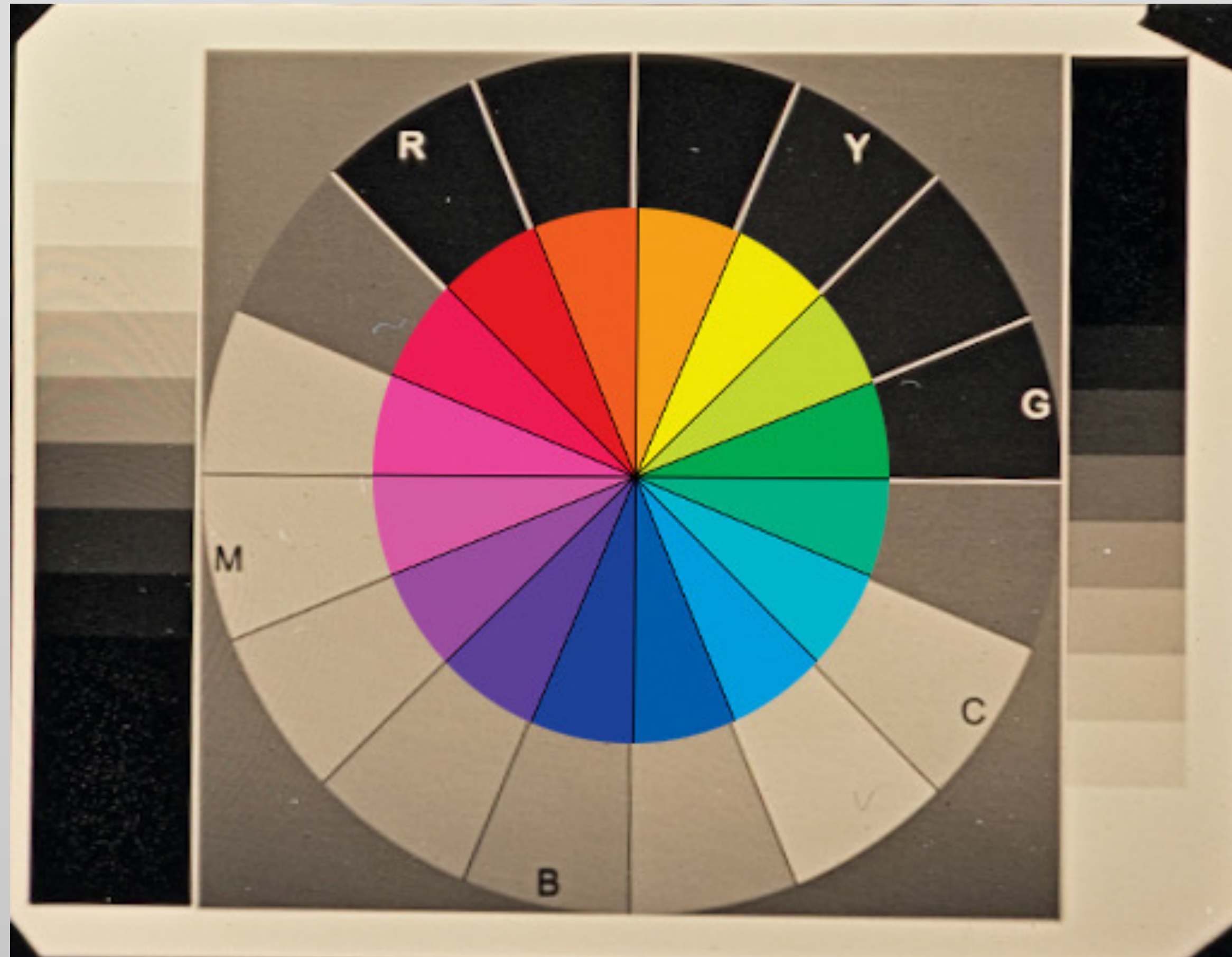
DESCRIPTIVE TITLE: Portrait of Blind Man
Holding a Cat

George Eastman Museum collection

"Trust was also surely a factor in ... a striking portrait of a blind man holding his cat. Unable to experience the daguerreotype magic for himself, the subject nevertheless understood the importance of having his likeness made and relied fully on the photographer to make a faithful and sympathetic portrayal."

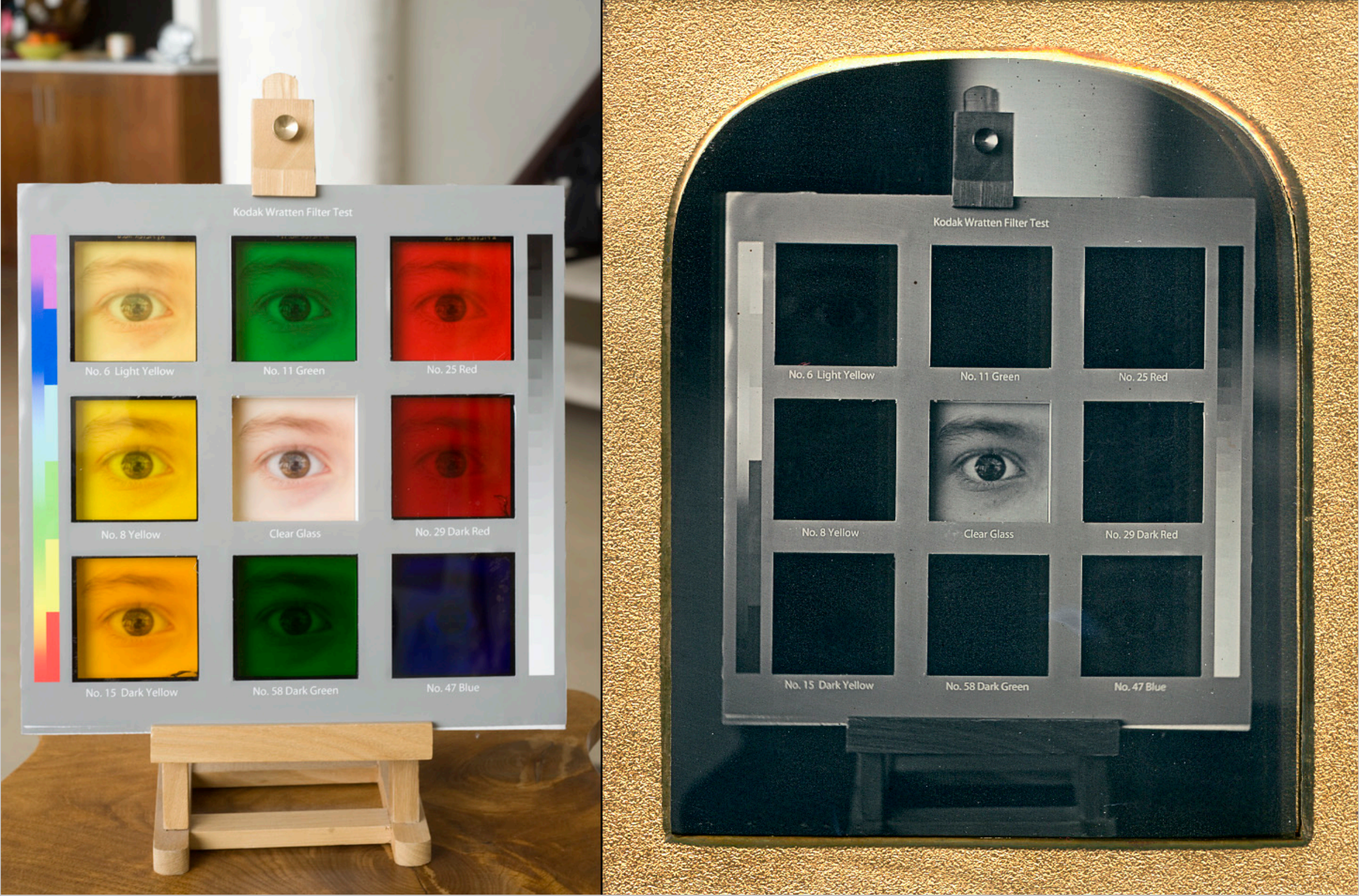
Taschen p4

INTERPRETING HISTORICAL DAGUERREOTYPES



Spectral Sensitivity of Daguerreotypes

INTERPRETING HISTORICAL DAGUERREOTYPES



Wratten Filter Daguerreotype Experiment

INTERPRETING HISTORICAL DAGUERREOTYPES



“Double D” therapeutic eyeglasses

INTERPRETING HISTORICAL DAGUERREOTYPES

Center Focus



Perimeter Focus



John Ruskin and Frederick Crawley, Thun. *Panoramic Views of Thun and the River Aare*. c.1854
Collection of Ken and Jenny Jacobson.

DAGUERRE & NIÉPCE : RESEARCH GOALS

1: Speed - Fifteen minutes or less

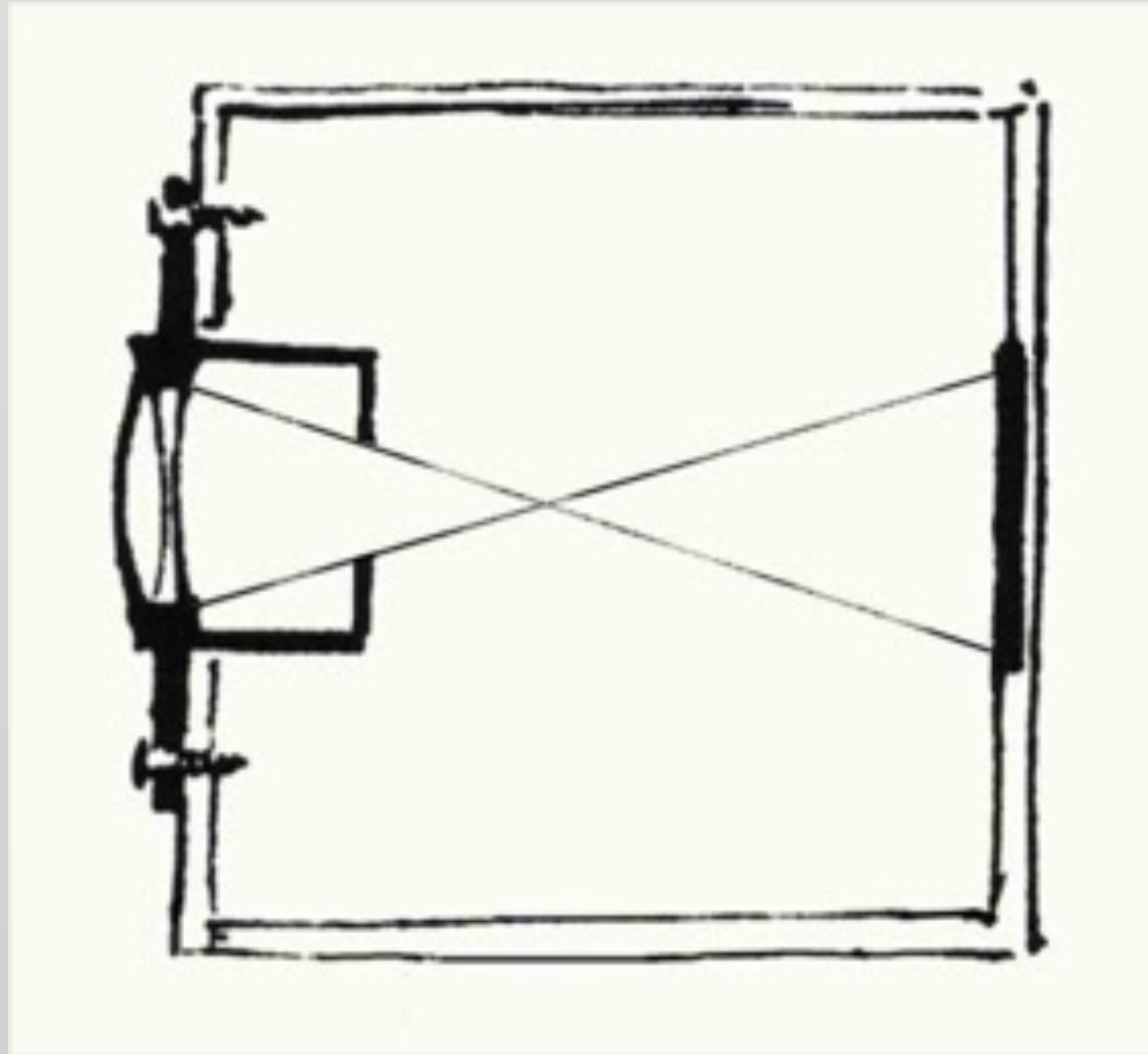
Letter from Daguerre to Niépce, Oct 12, 1829.

2: Quality -“lights and shades correct to nature with sharpness of image, in the delicate gradation of tones, and in the perfection of detail”

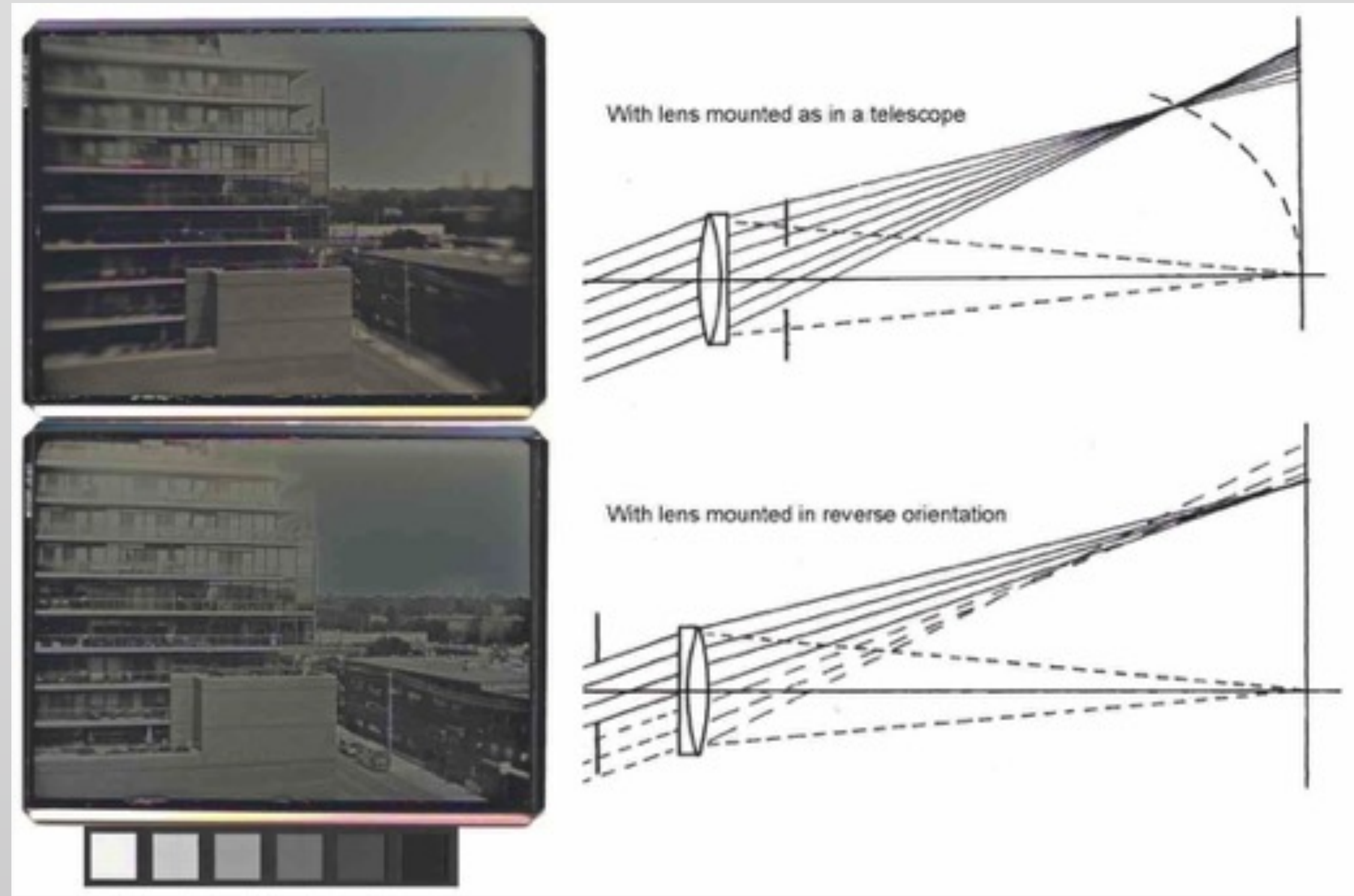
Daguerre's description from his 1838 broadside.

3: Permanence - once made, the image must be fixed against further changes in daylight

“By this arrangement, the light intensity is increased by one-half, at least”



Daguerre's sketch
sent to Niépce on April 19, 1833



f/6 above
f/7.5
below

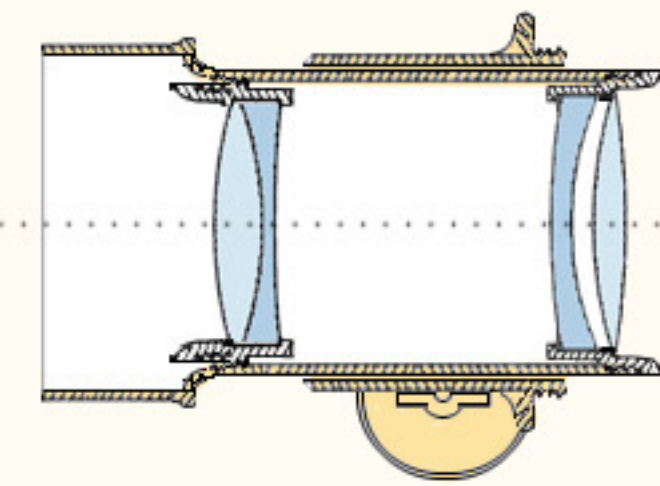
INTERPRETING HISTORICAL DAGUERREOTYPES



Hypothesis

Petzval's Portrait Lens

1841



$f/3.6$ Half-Plate

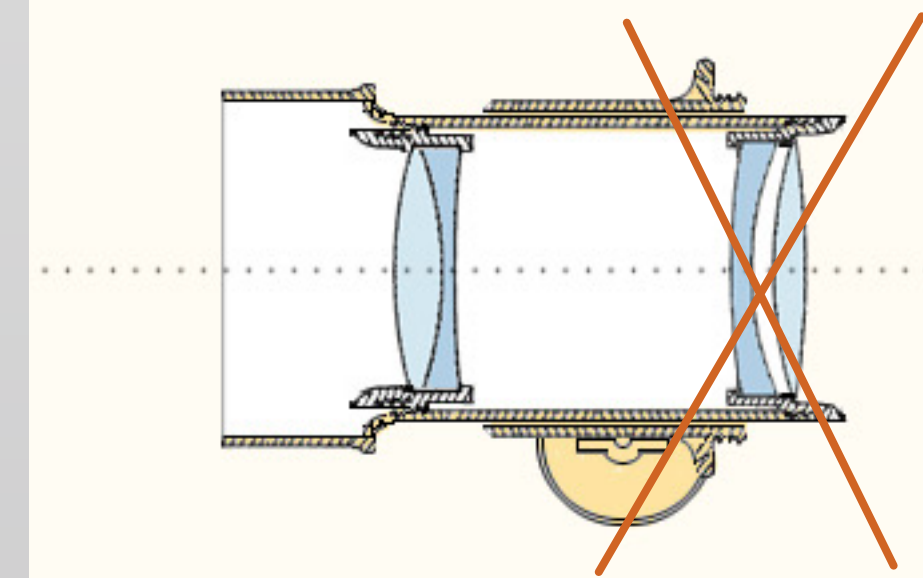
INTERPRETING HISTORICAL DAGUERREOTYPES



Hypothesis

Petzval's Portrait Lens

1841



$f/3.6$ Half-Plate

INTERPRETING HISTORICAL DAGUERREOTYPES

Center Focus



Perimeter Focus



Hypothesis

INTERPRETING HISTORICAL DAGUERREOTYPES



After the drawing by John Ruskin, Thun. *Panoramic Views of Thun and the River Aare*. c.1854
c. 1854. Chromo-lithograph. Private Collection

INFORMING HISTORICAL TEXTS WHERE NO IMAGES REMAIN

It is said that Mr. Daguerre has discovered a means of receiving on a plate of his own preparation the images produced by the camera obscura, so that a portrait, a landscape, a view of any kind, projected on this plate in the ordinary camera obscura, leaves its imprint there in light and shade, and thus presents the most perfect of all drawings...

The physical sciences have perhaps never presented a comparable wonder as this!

Journal des Artistes. September 27, 1835

INFORMING HISTORICAL TEXTS



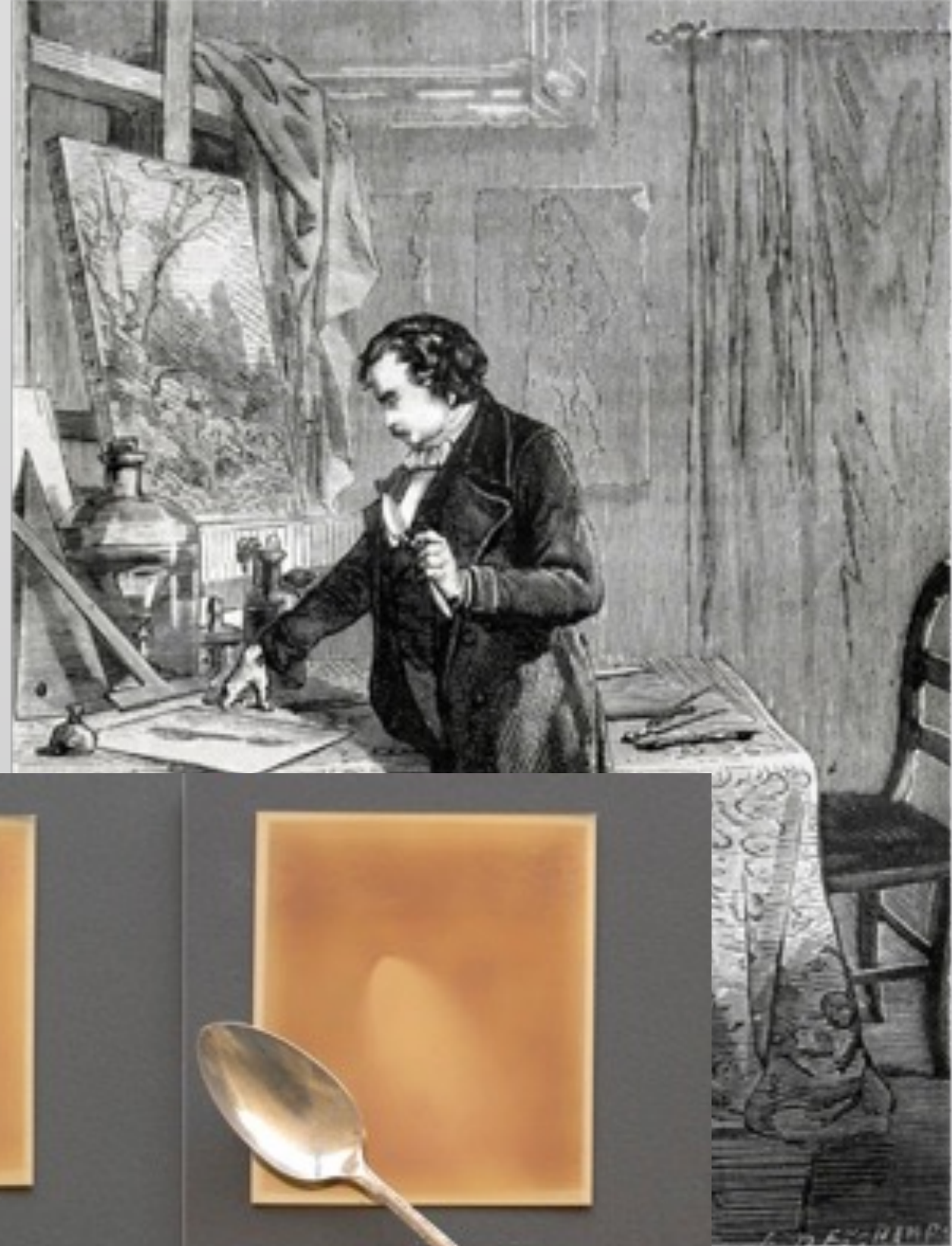
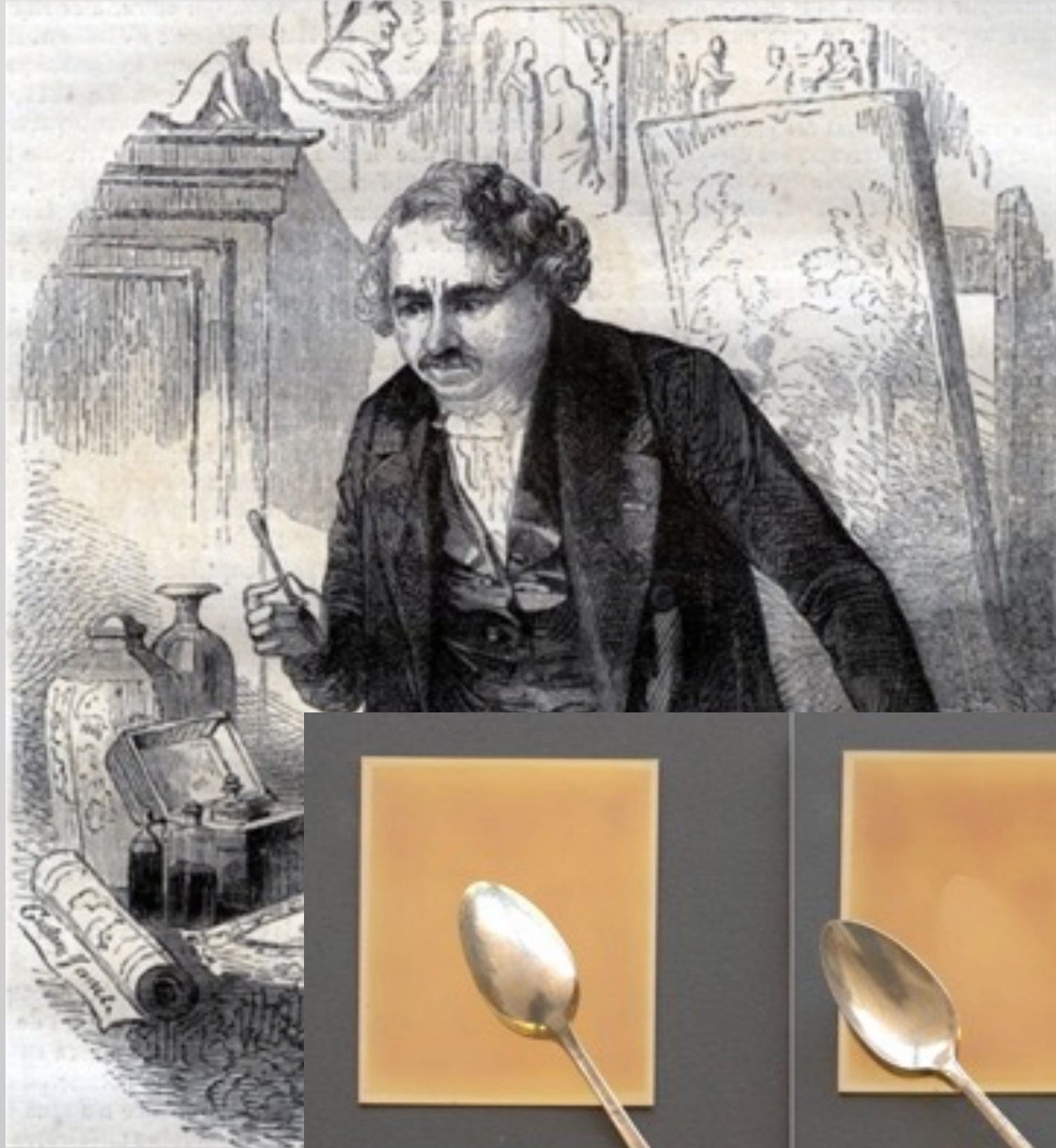
Musée des familles. 1853



Merveilles de la science. 1869

Daguerre's supposed accidental discovery of silver iodide sensitivity to light.

INFORMING HISTORICAL TEXTS



		
9:45 a.m.	9:50 a.m.	9:56 a.m.

INFORMING HISTORICAL TEXTS

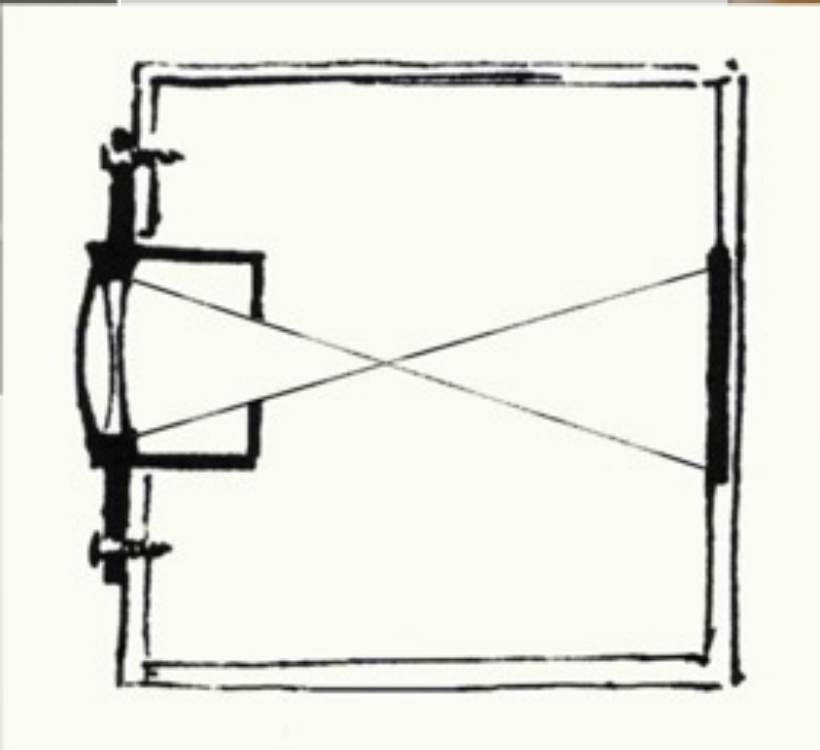
Daguerre wrote to Niépce on *May 21, 1831*...

“Iodine is exceedingly sensitive. I have obtained results in a camera in three minutes, in a solar microscope two minutes and one minute by contact printing in sunshine...”

This is excellent, but we must find a way to reverse the effect that is contrary to nature, and above all fix the image.”

INFORMING HISTORICAL TEXTS

View from my Studio



Negative Print-out image



f/6 @ 20 minutes!

INFORMING HISTORICAL TEXTS



“At this period, [1831-1835] I did not know that the image existed on the surface of the iodide of silver before it was visible”

L.J.M. Daguerre, 1839.

Daguerre wrote to Niépce... “We must find a way to reverse the effect”

INFORMING HISTORICAL TEXTS



“He [Daguerre] stated that after iodizing his plate and exposing it in the camera, he held it over mercury heated...to the *boiling point*”

C.R. Meade on his visit to Daguerre in Bry, 1848. Levi Hill, *On Daguerreotype*, p7 1854.

INFORMING HISTORICAL TEXTS

1835



DagTest 11-21-2011. Mercury droplet test.



DagTest 1-14-2016. Mercury vapour reversal of a visible negative image.

Niépce ... “was not acquainted with the property possessed by this substance [iodine], when in contact with silver, of being decomposed by light.”

Daguerre, 1839

INFORMING HISTORICAL TEXTS

Mercury developed latent image before fixing



f/16 @ 45 minutes in late November!

INFORMING HISTORICAL TEXTS

On October 5, 1835 Daguerre wrote to Isidore...

"I had let the sun in my laboratory
without any precaution to preserve them"

INFORMING HISTORICAL TEXTS

After 5 hours exposure to daylight.



"I had let the sun in my laboratory without any precaution to preserve them"

INFORMING HISTORICAL TEXTS



Immediately after mercury



After 5 hours



The next day



After 50 days

INFORMING HISTORICAL TEXTS

1835 replica



Quality -“lights and shades correct to nature with sharpness of image, *in the delicate gradation of tones, and in the perfection of detail*”

INFORMING HISTORICAL TEXTS



Earliest extant daguerreotype fixed with salt water - 1837
(Newhall copy - original now destroyed)

INFORMING HISTORICAL TEXTS

Salt Water Fixing



.999 fine silver-clad copper plate

Solid .999 fine silver plate

INFORMING HISTORICAL TEXTS

1839

1835 replica



Louis J. M. Daguerre, *Still Life*, Academy of Fine Arts in Saint Petersburg, Russia

“Over the last five or six years, M. Daguerre’s method has merely undergone minor improvements that only a distinguished artist could consider necessary.”

Dominique François Arago, *Process by Daguerre*, February 4, 1839

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES



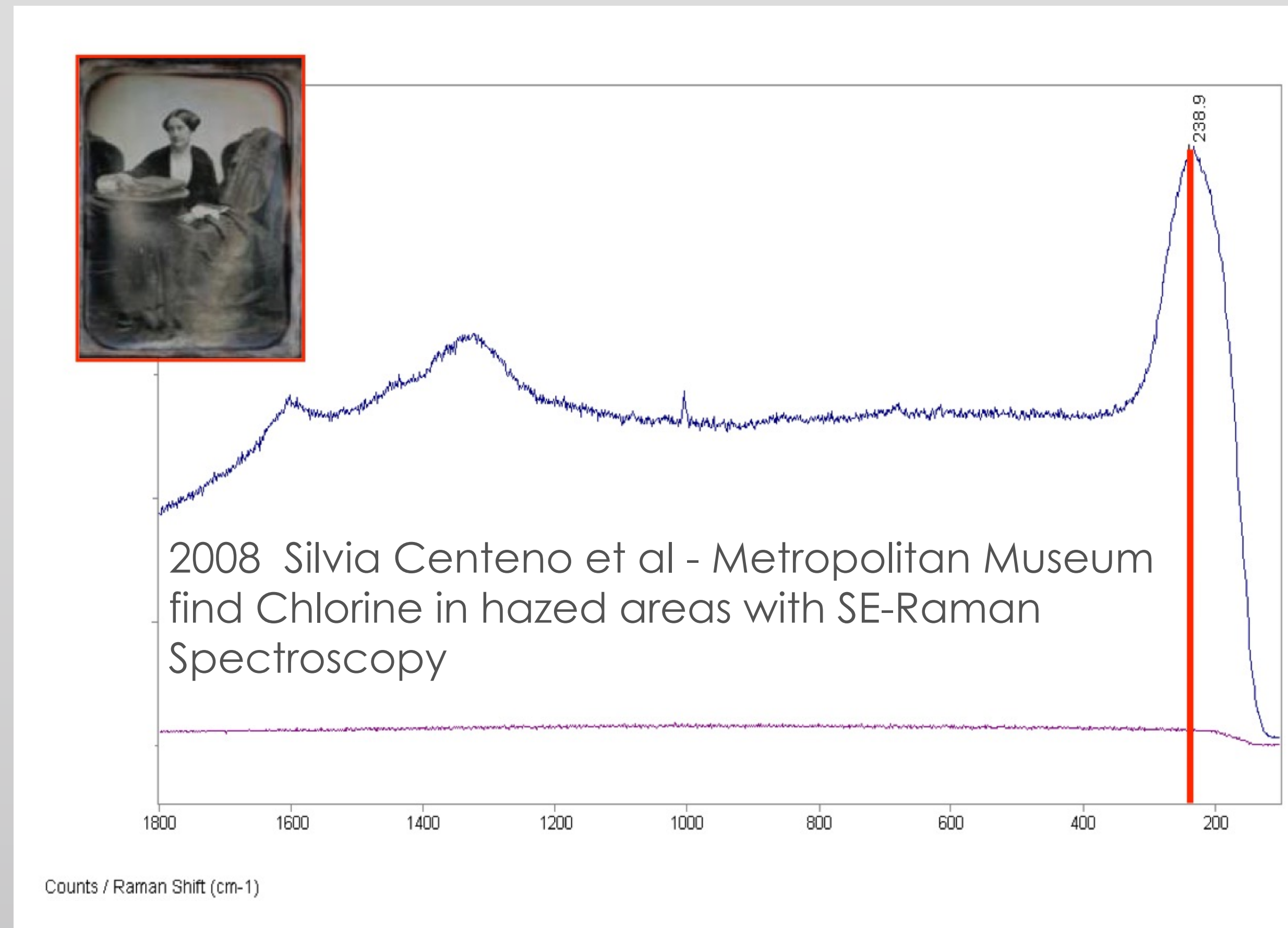
Before Exhibition (March 2005)



After ~ 1 month on Display (July 2005)

Young America - The Daguerreotypes of Southworth and Hawes

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES



Theory: $\text{AgCl} + h\nu [\text{UV-Vis}] \rightarrow \text{Ag metal}$ (photo-reduction reaction).

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES

The Case of the Disappearing Daguerreotypes

Scientists theorize that the process draws silver to the surface to form subsurface voids. In the case of Southworth and Hawes, these voids may have trapped chlorine from Boston's salty air. Light would then re-expose the sensitive silver chloride and form a haze that mars the image - Scientific American December 2012

A Portrait of Immortality, Faded

Bigelow, Wiegandt, and others have theorized that the Eastman House images, originally taken in Boston, trapped chlorine from the sea air in their subsurface voids. When the images were exposed to light, the chlorine reacted with the silver plate and clouded the surface. - The New Yorker June 2013

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES



1999 Sotheby's



2005 GEH

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES



2005 GEH



2013 Robinson

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES



left stereo plate

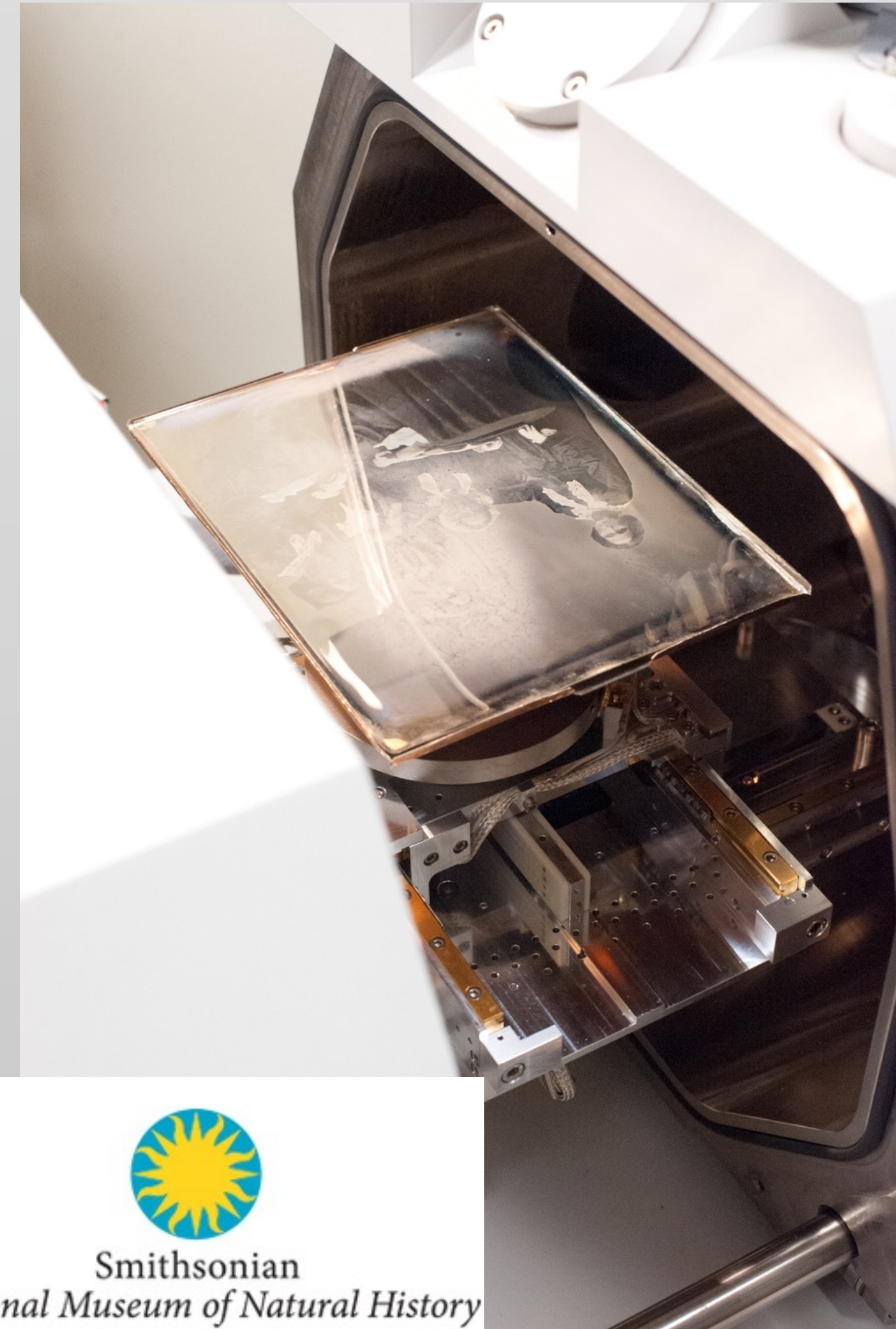


right stereo plate

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES

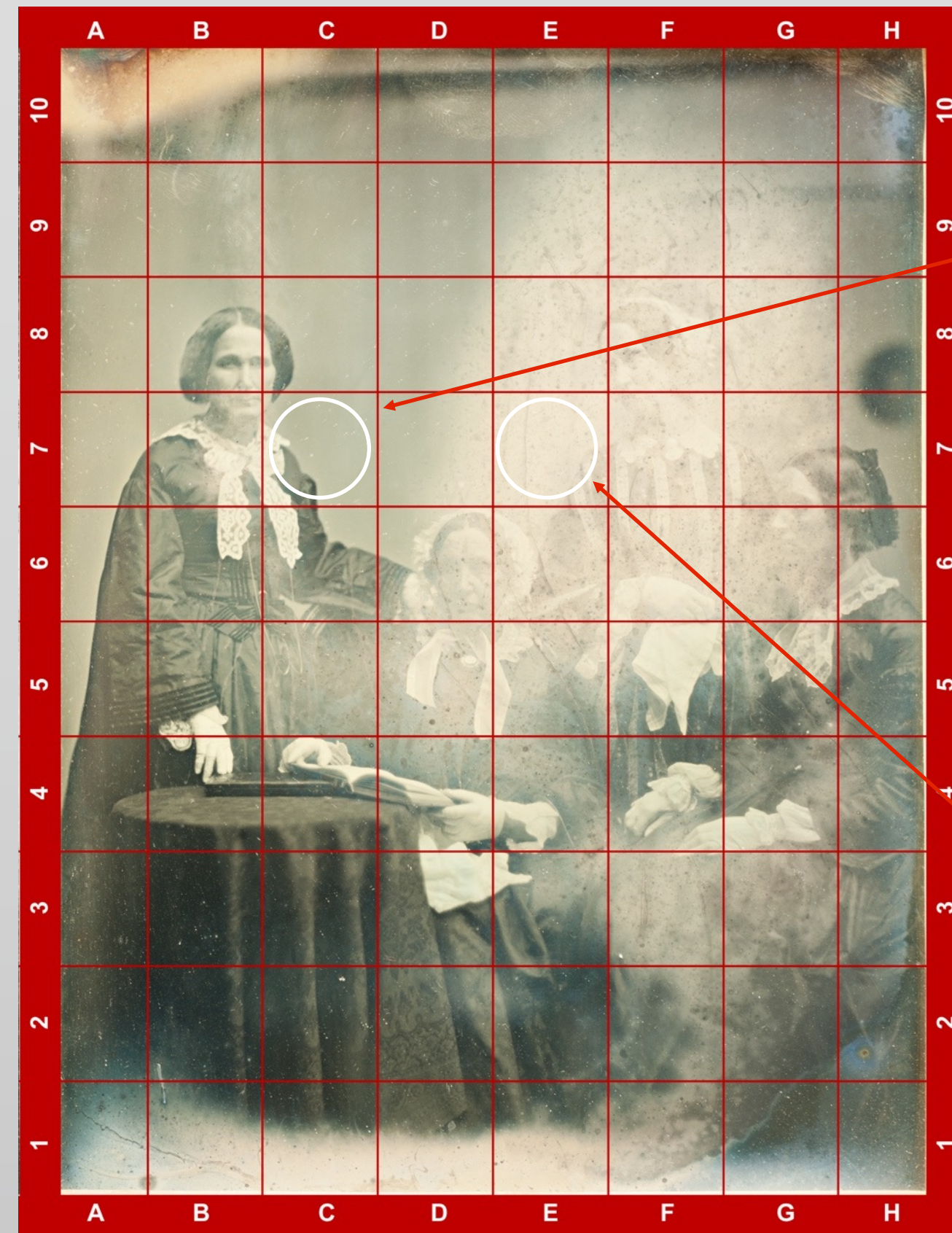


Dr. Ed Vicenzi

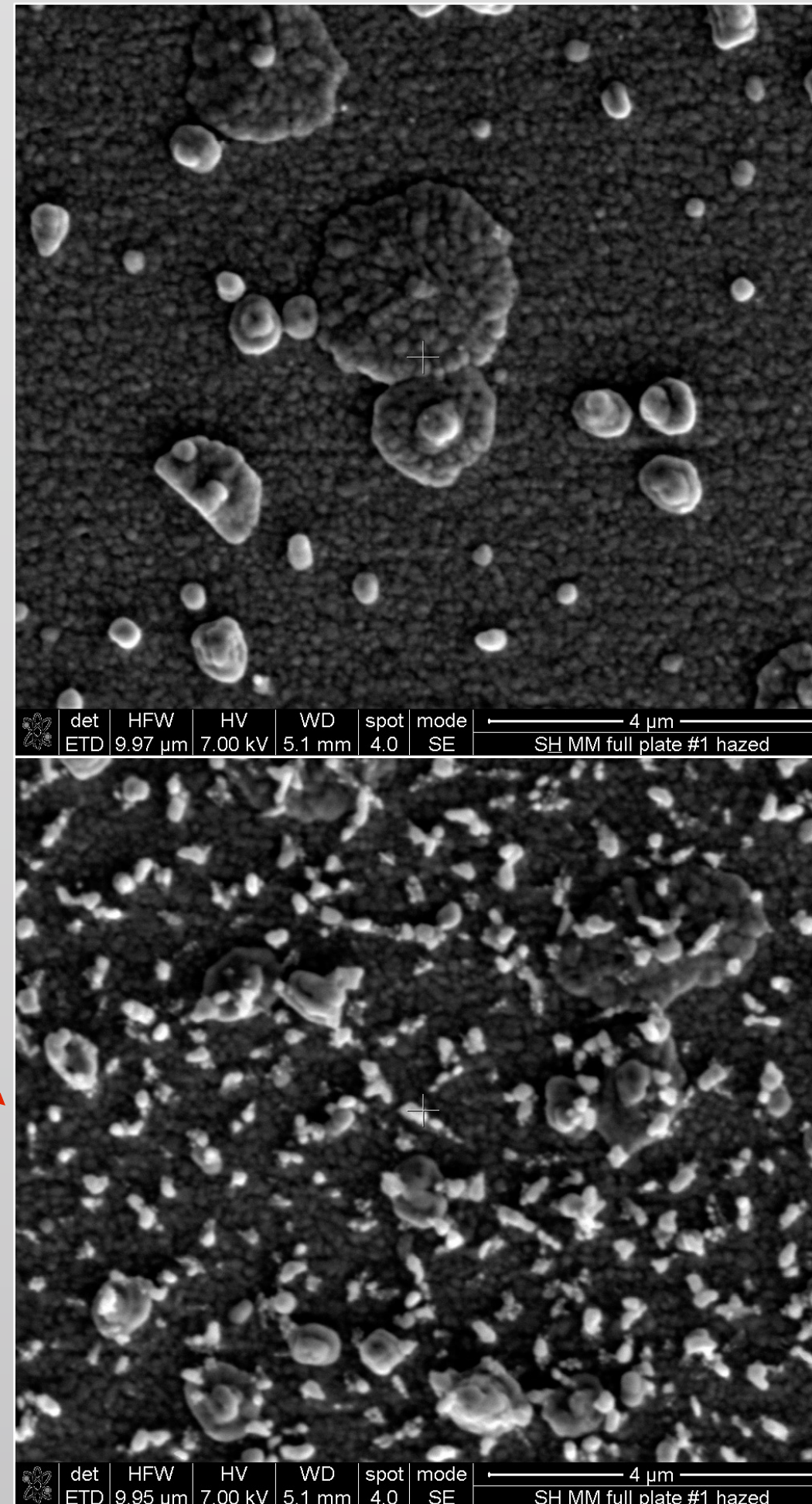


SEM - microanalysis

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES



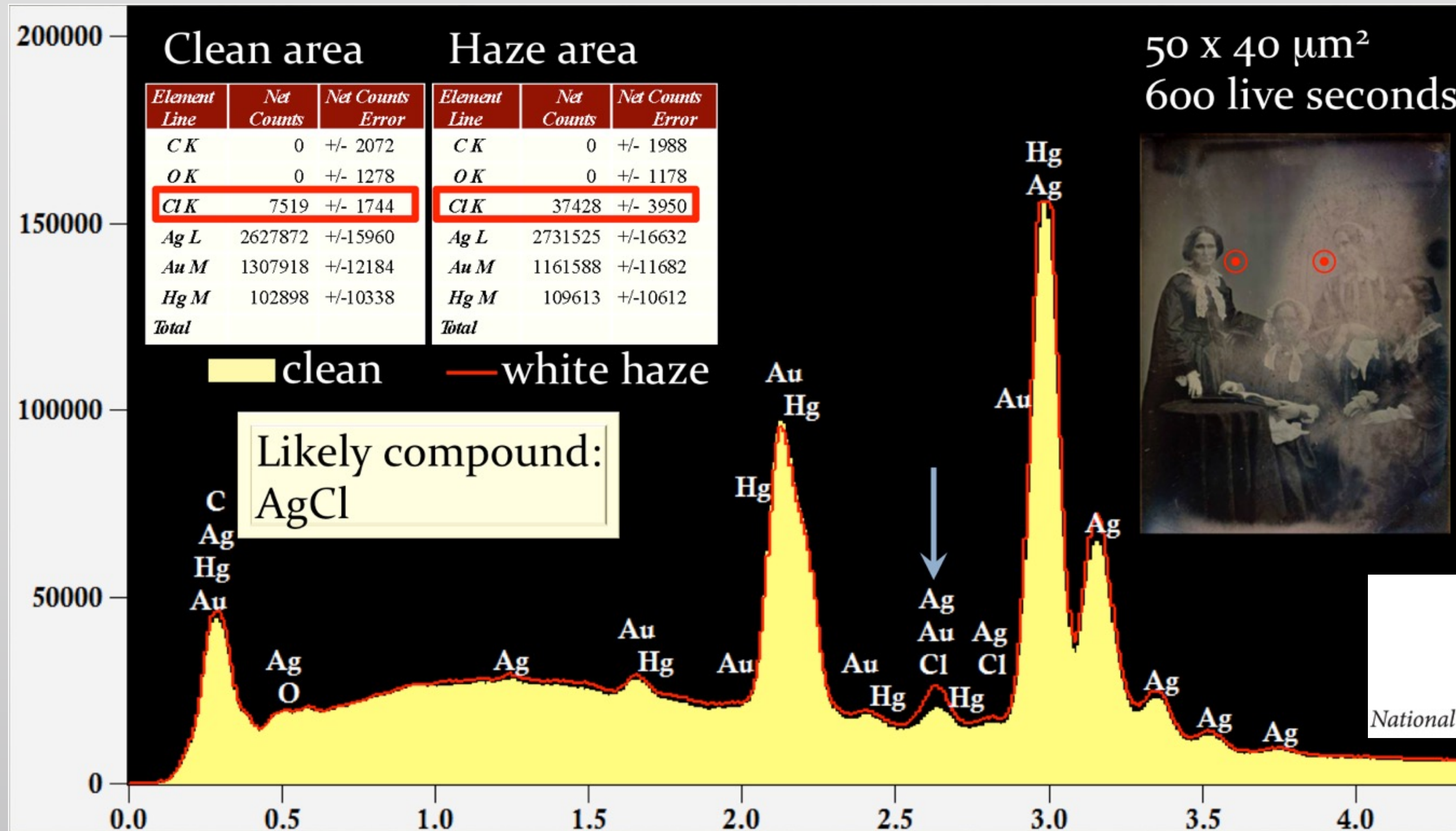
SH-MM-FP_1
Disfigured Plate



C7

E7

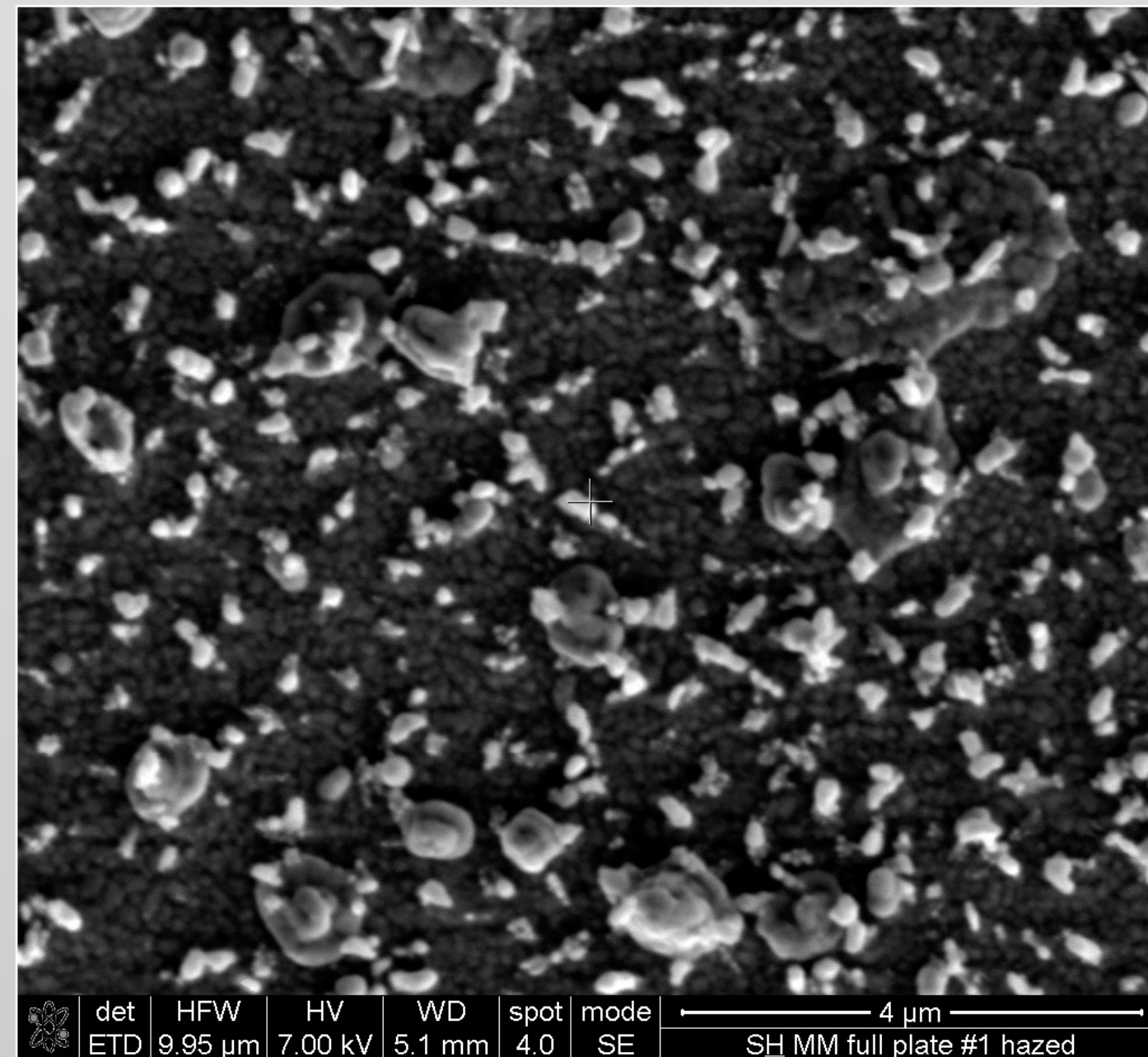
PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES



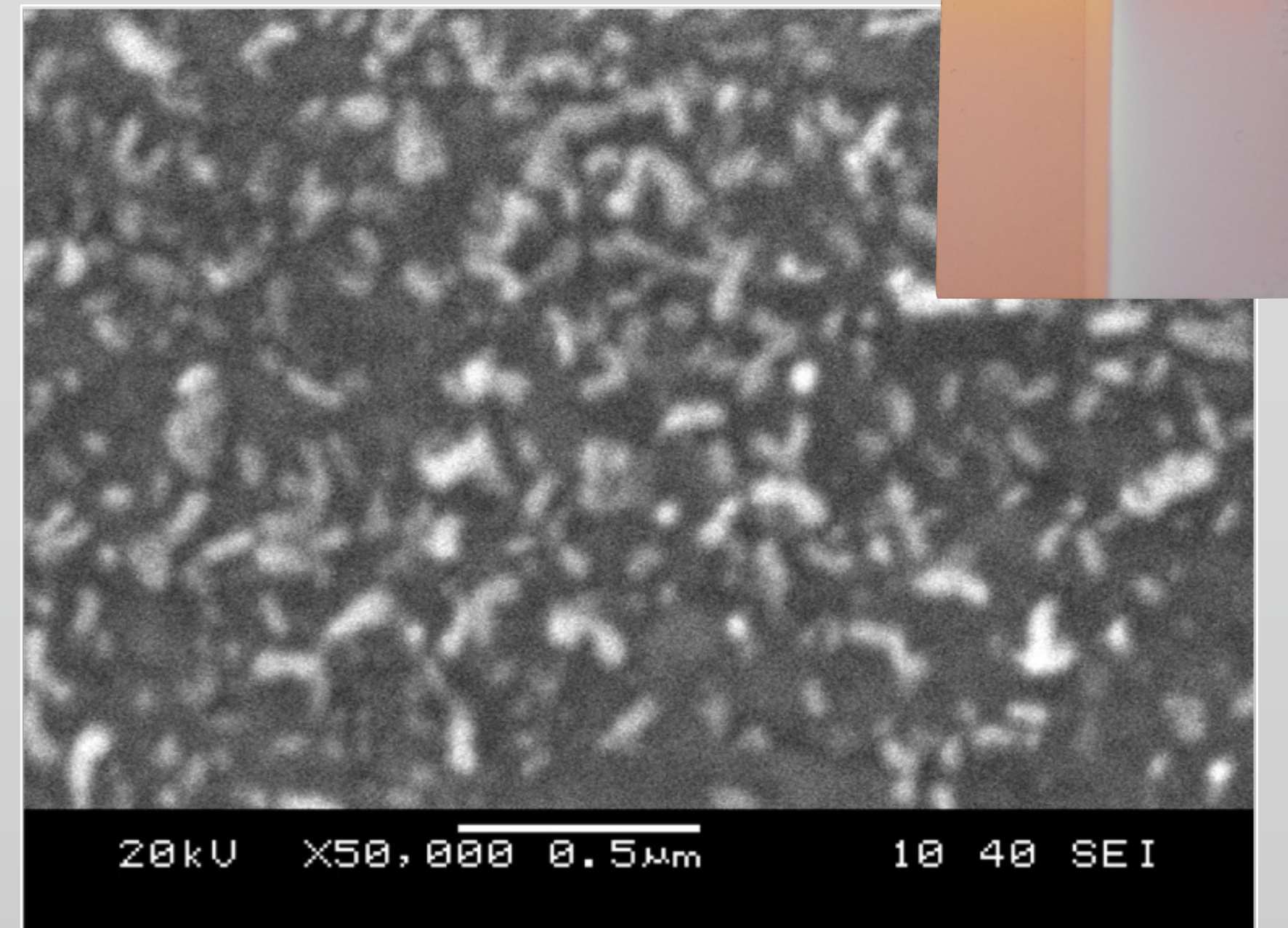
5X chlorine in hazy area!
Zero chlorine on the other plate!

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES

SH-MM-FP_1
Disfigured Plate



2010 - modern plate



Iodine (100s) and Bromine (50s) Plate Sensitization
Pre-camera exposure and development.

Familiar Morphology

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES

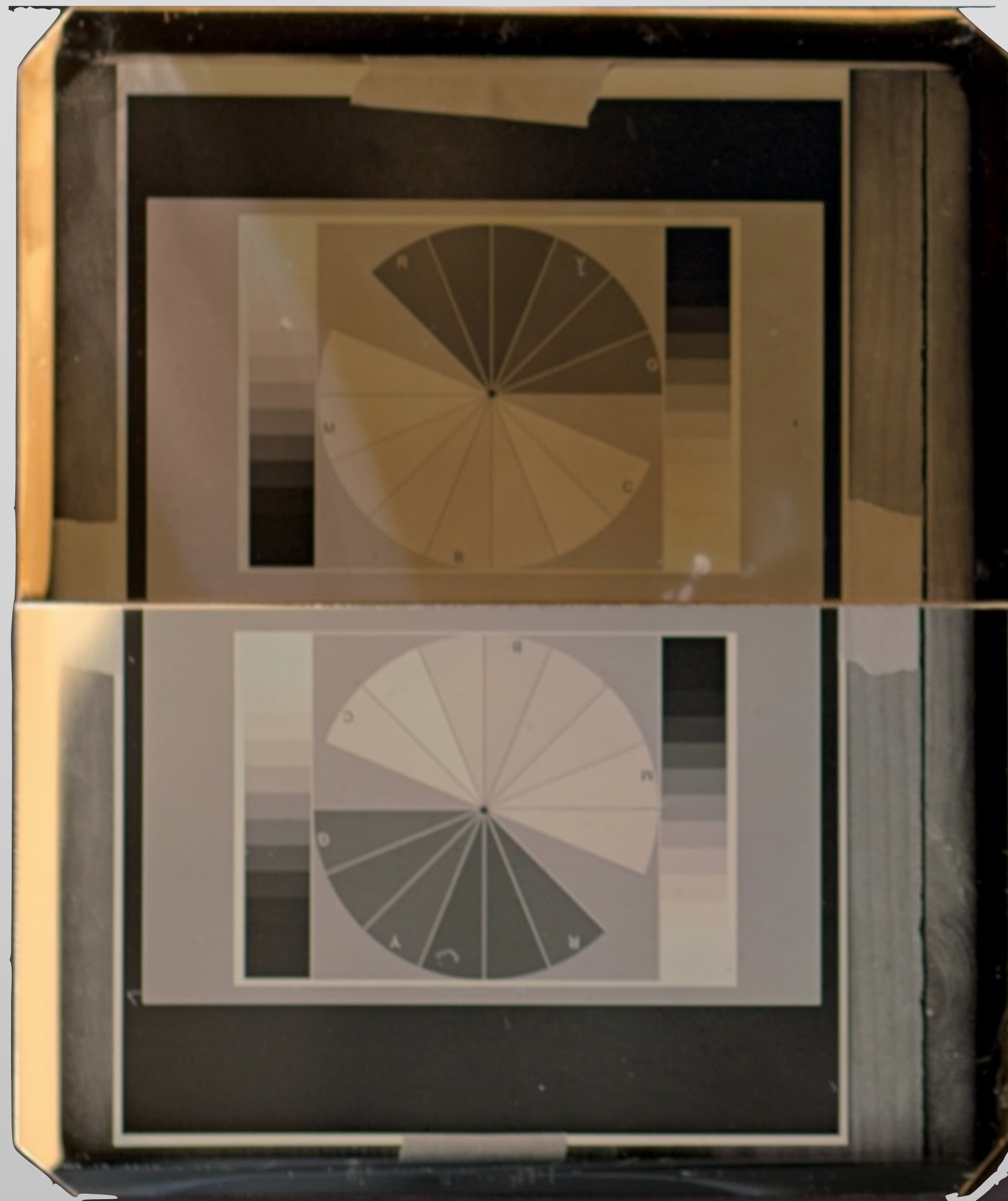


Plate B
half chlorinated
vapour from 2g calcium
hypochlorite 20 minutes.

photographed March 21
then placed in dark storage

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES

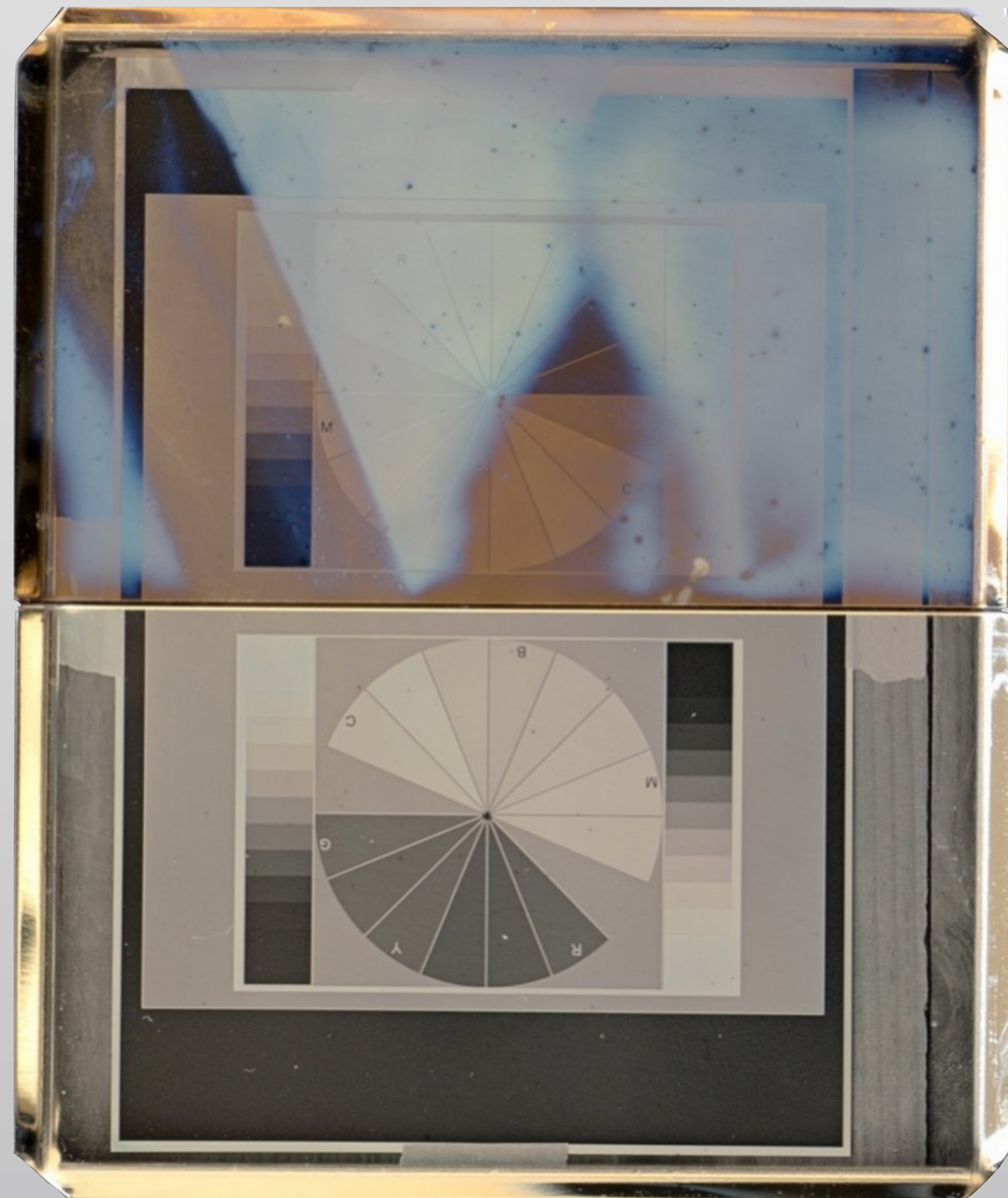


Plate B
half chlorinated
2g calcium hypochlorite

photographed March 23
after two days in dark storage

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES

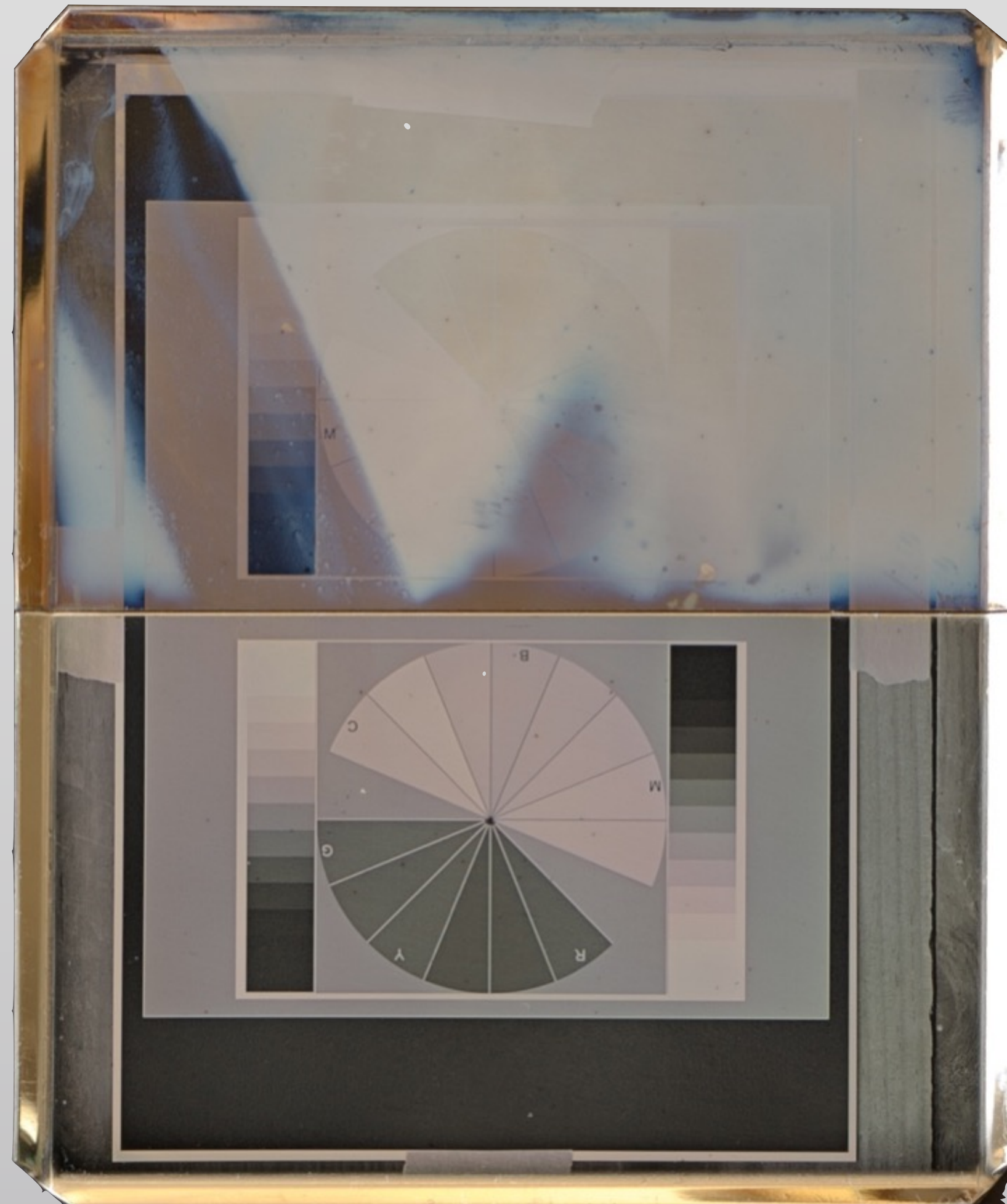
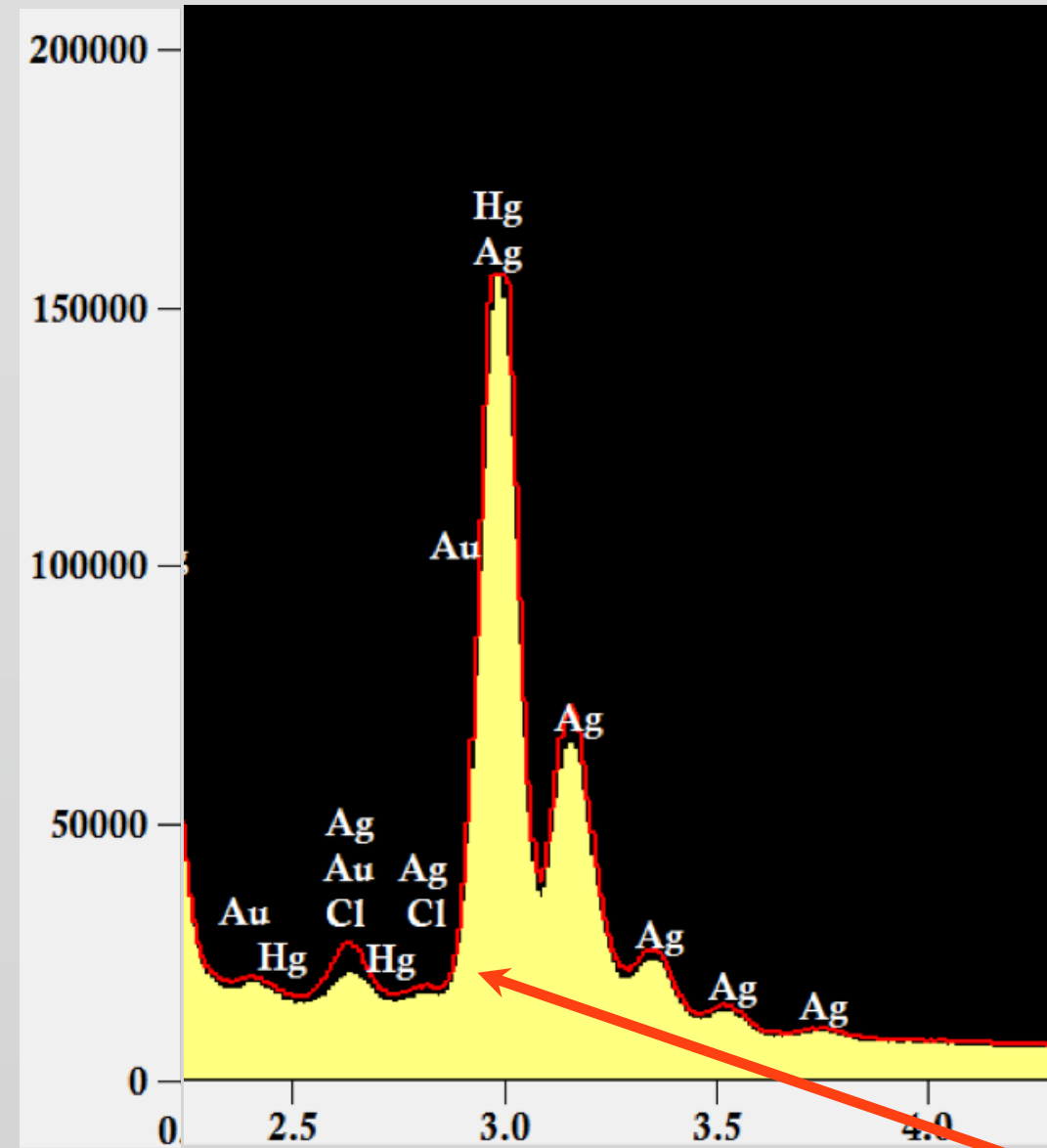


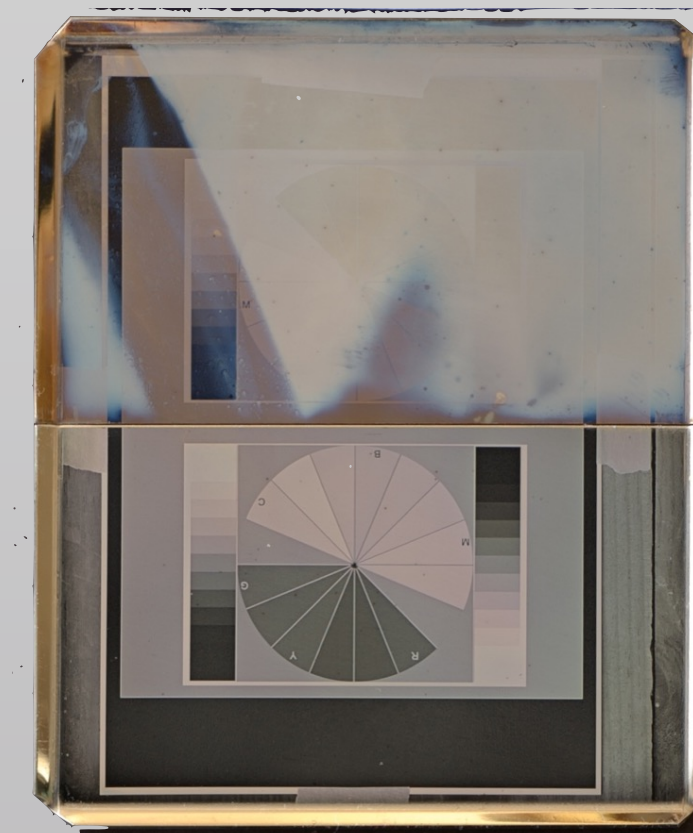
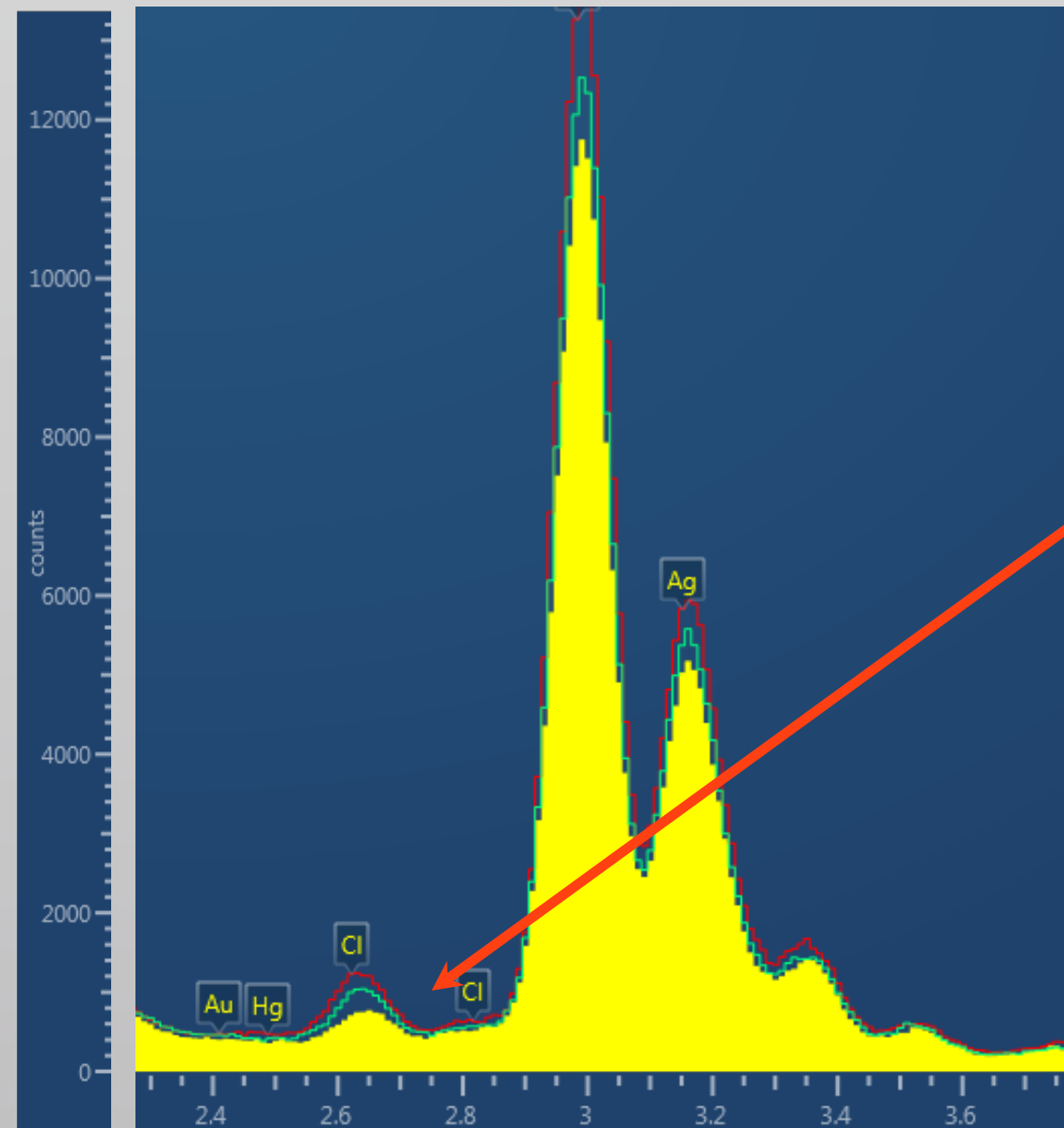
Plate B
half chlorinated
2g calcium hypochlorite

photographed March 31
after ten days in dark storage

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES



EDS Spectrum - a good match between Southworth and Hawes full plate and modern chlorinated samples.



PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES

Exposed to 24 hours of daylight 50 X
brighter than Young America exhibition

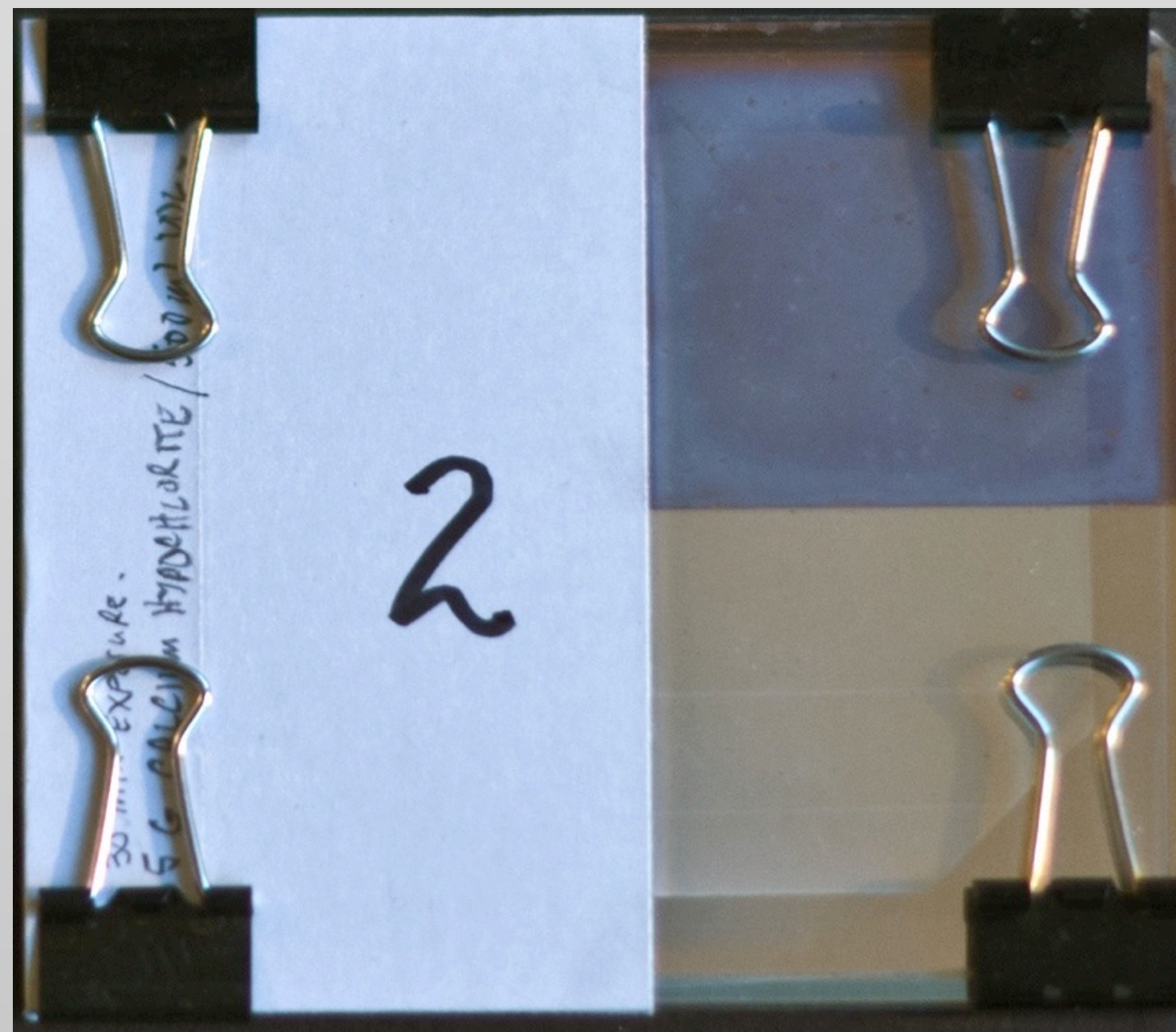


Plate 2

Daylight exposure begins at 12:45 p.m. June 7th
finishes at 8:50 p.m. June 9th.

Total Exposure to light > 100 Lux 23 hrs 28 min
Average Lux for the day 4860
(discarding high and low values and 1 minute
intervals)

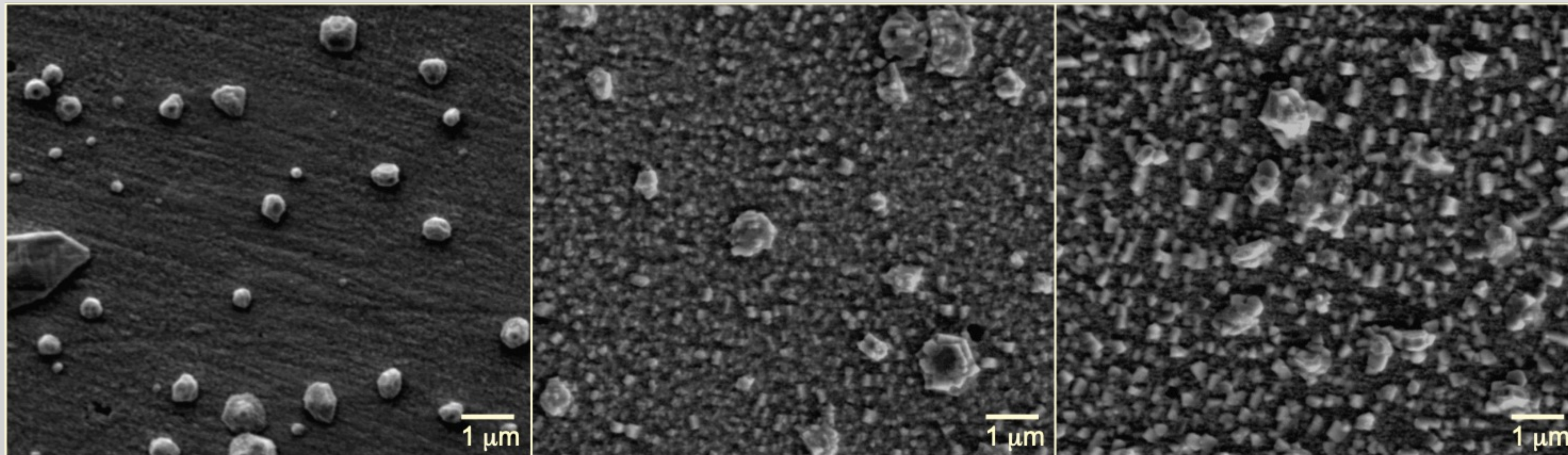
Average colour temp 7400K

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES

clean plate

no exposure to light

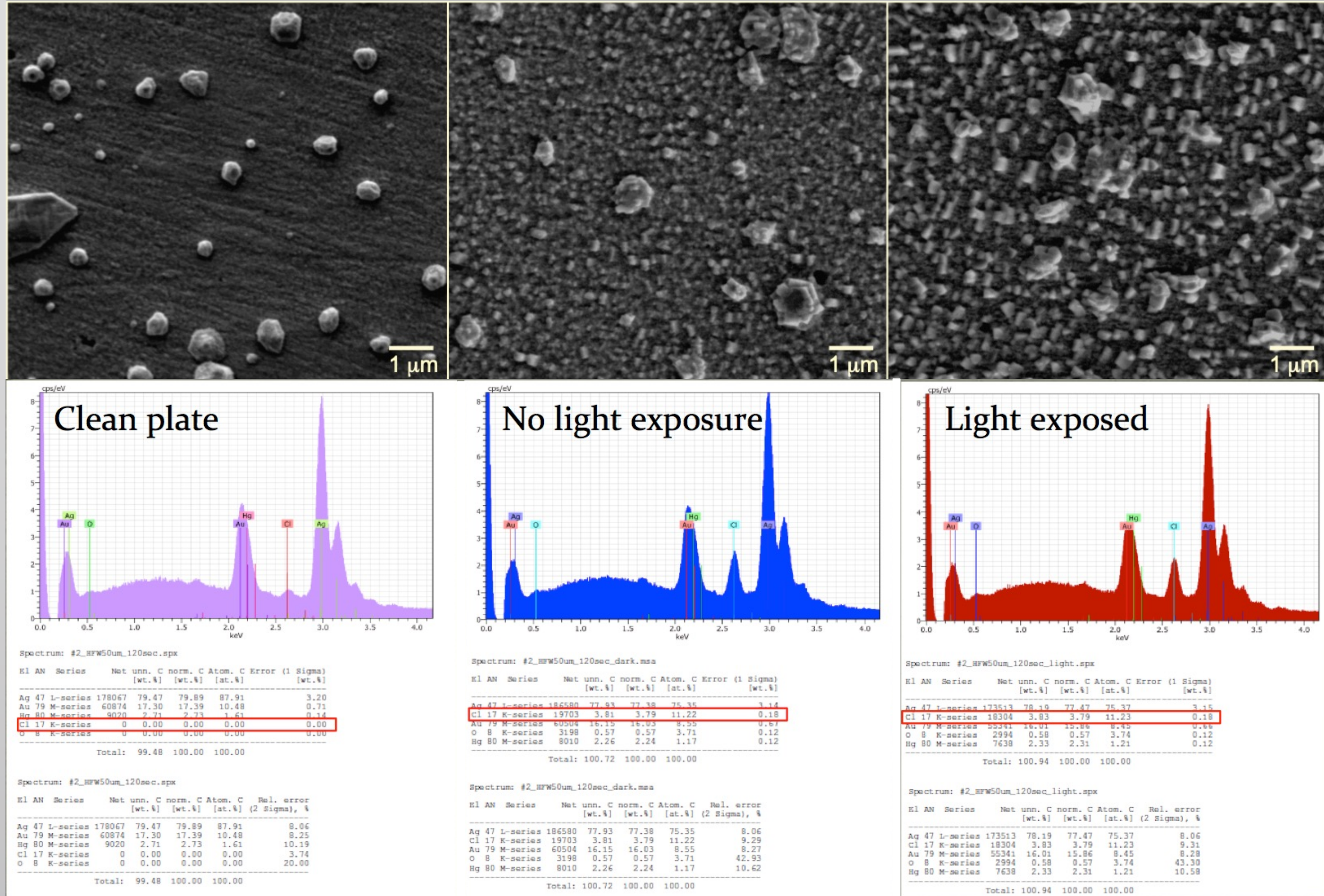
light exposed



Masked

Chlorinated

PRESERVATION AND CARE OF HISTORICAL DAGUERREOTYPES



PRESERVATION AND CARE OF HISTORICAL DAGUERRETYPES

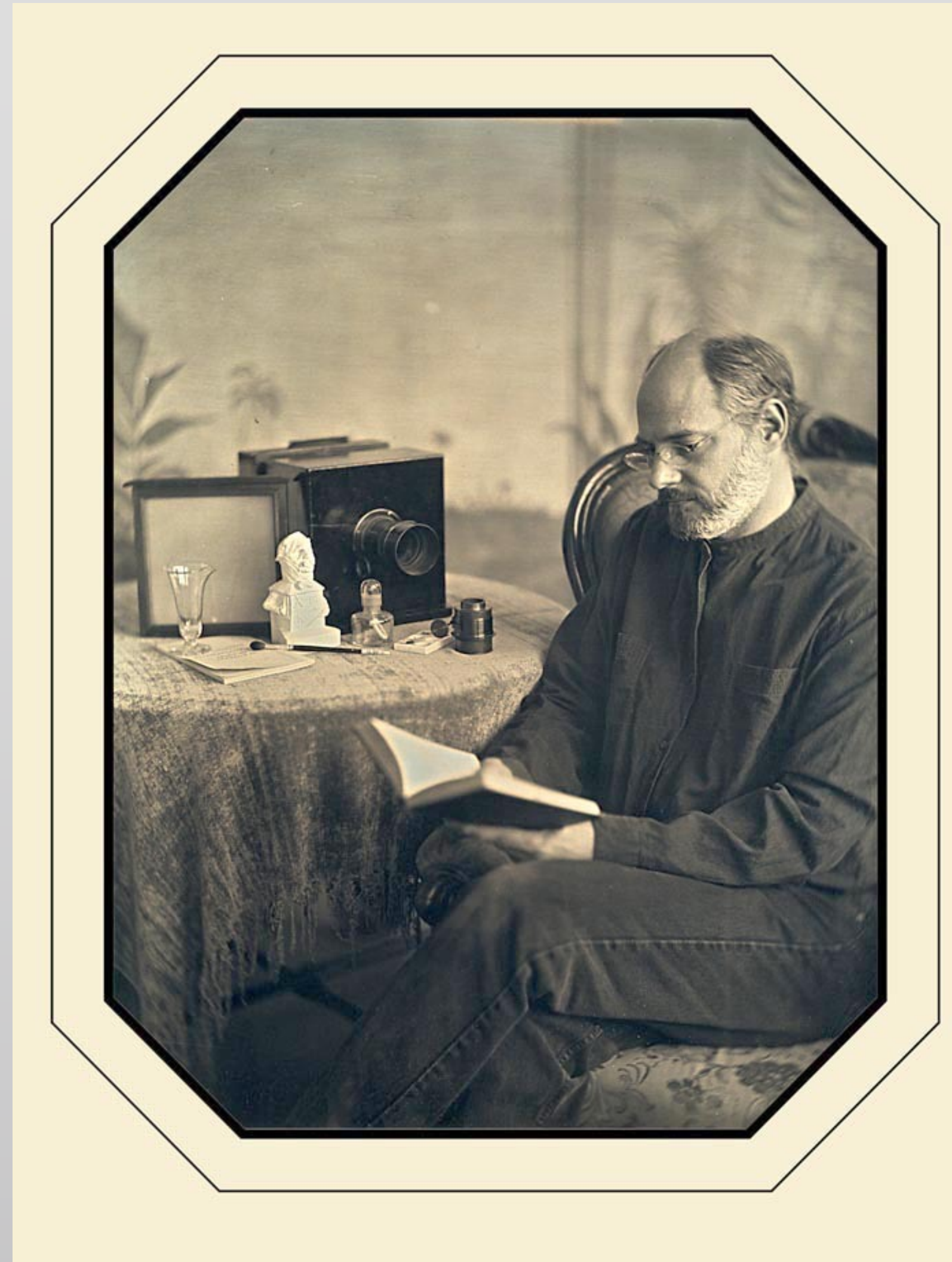


right stereo plate - before treatment



right stereo plate - after treatment

THANK YOU!



www.centurydarkroom.com

Dr. Mike Robinson *Daguerreotypist*