

plementing a research-driven, sustainable, preventive
conservation solution developed during an extended
grant-funded project

Research and Conservation of the Daguerreotype

Funded by the National Endowment for the Arts
The National Science Foundation
The Andrew W. Mellon Foundation
The Getty Foundation

George Eastman House International Museum of Photography and Film
and
The University of Rochester

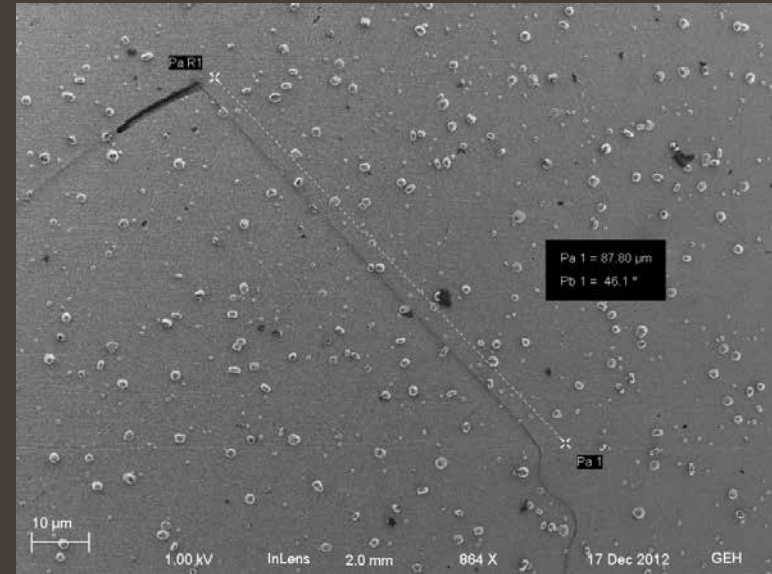
Ralph Wiegandt; George Eastman House, NEA Grant and NSF Researcher
Dr. Nicholas Bigelow; University of Rochester, NSF Principal Investigator



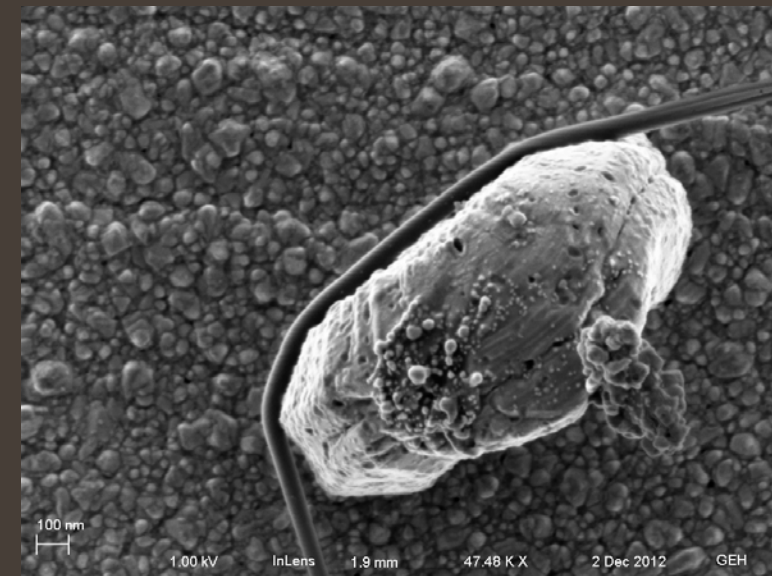
Unidentified Young Girl: Southworth & Hawes: ca
1850: sixth plate



Plate George Eastman House study collection



SEM image of image 50 nm diameter nanotube-nanowire: 80 microns in length



The 50 nm diameter nanotube-nanowire wrapped around an image particle: 47KX mag

YOUNG AMERICA THE DAGUERRETYPES OF SOUTHWORTH & HAWES



Shortly after the announcement of the first practical photographic process by Louis-Jacques Mande Daguerre in Paris in 1839, two young Americans set out to master the complexities of the novel medium. Working independently, Albert Smith Southworth (1811-1894) and Joseph James Hawes (1808-1901) established small daguerreotype studios to satisfy the immediate demand for photographic portraits. In 1845, Southworth and Hawes formed a partnership that lasted for two decades, and established a studio in the center of one of Boston's most prominent neighborhoods.

With a population of 50,000 in 1840, Boston was the second largest city in the United States. But more than that, it was the cultural capital, the "Athens of America," and it also exemplified "Young America," the national spirit of the time. The still-young country was possessed with a philosophical, economic, spiritual, and political conception of itself as "The Great Nation of the Future." Free-market capitalism, territorial expansion, and support for republican causes abroad were espoused with an energy that characterized the developing identity of the country at a time of divisive sectional strife that would lead to the Civil War. Unique in the increasingly self-reliant nation, "Boston," Ralph Waldo Emerson said, "commands attention as the town which was appointed in the destiny of nations to lead the civilization of North America."



The goal of Southworth & Hawes was to perfect the daguerreotype and provide the very highest quality portraits to the bustling city's elite. Although they adopted the portrait as their principal stock in trade, their approach to the genre was anything but conventional. Unlike many early practitioners, Southworth & Hawes understood fine-art theory and sought to apply such principles to their early photography. By constructing a huge overhead skylight to explore the effects of light and shadow, by refining and polishing the surface of their large scale plates, by carefully posing their subjects amid a few symbolic props, and even by experimenting with painting the inside of their camera white, Southworth & Hawes achieved a degree of photographic artistry rivaled by few in their profession.

Their large whole-plate portraits of such contemporary celebrities as Daniel Webster, Lemuel Shaw, Lola Montez, and Henry Wadsworth Longfellow were dramatically posed and boldly modeled. They served the most radical political activists of their day, the fiery abolitionists, and the leading artists and writers of the American Renaissance. They also took remarkable outdoor views of the newly opened Mt. Auburn Cemetery, American warships in drydock, militias mustering on the Boston Common, and street scenes below their windows. Southworth & Hawes's quest for an original pictorial language exemplified both the aesthetic possibilities of the new medium and the burgeoning spirit of the emerging national culture.

— Grant B. Romer and Brian Wallis CURATORS

THE MUSEUM'S PRESENTATION OF YOUNG AMERICA HAS BEEN GENEROUSLY FUNDED BY THE MOLLY BENNETT LUPE & GARLAND M. LASATER FOUNDATION FUND, AND BY ALAN S. SCHWARTZ, PA. '48, AND STEVEN L. SCHWARTZ, PA. '77.

Addison Gallery of American Art, Andover, MA

"Were you ever daguerreotyped O immortal man? And did you look with vigor at the lens of the camera...?"

— Ralph Waldo Emerson ("Our Age Is Ocular")



Addison Gallery of American Art, Andover, MA

Before Exhibition (May 2005)



After ~ 1 Month on Display (July 2005)



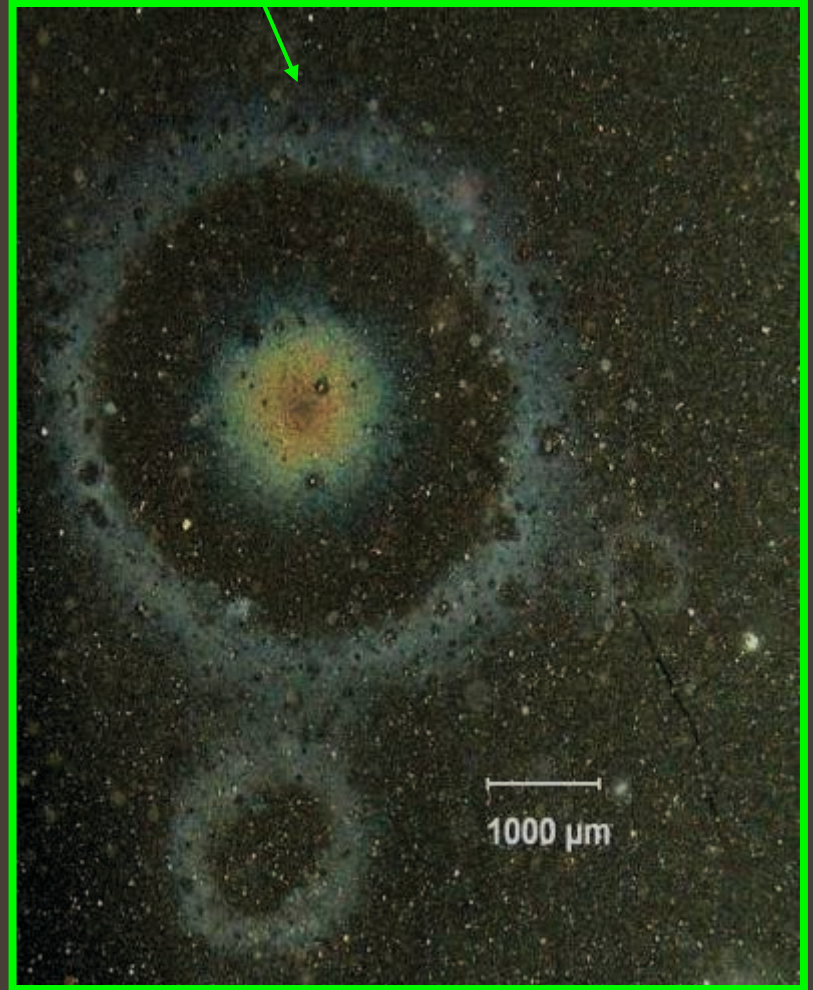
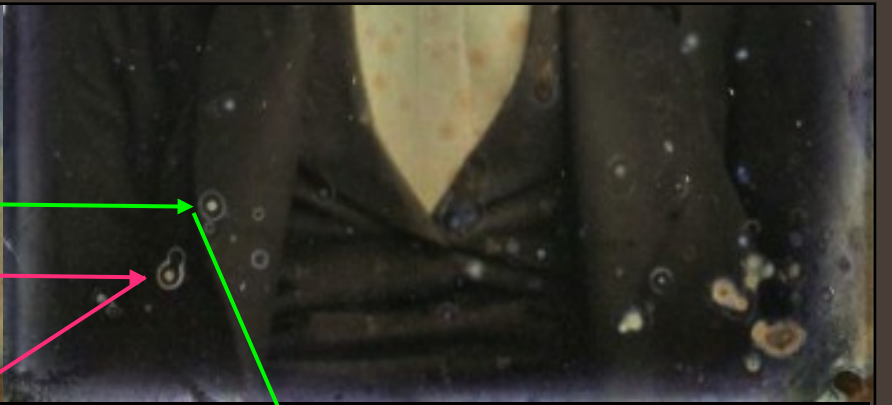
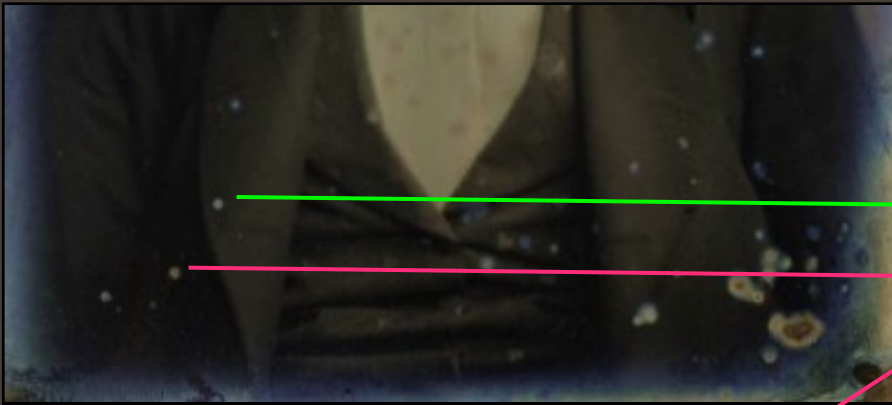
Unidentified Woman, ca.1850. Whole plate daguerreotype. George Eastman House. 1974:0193:0034

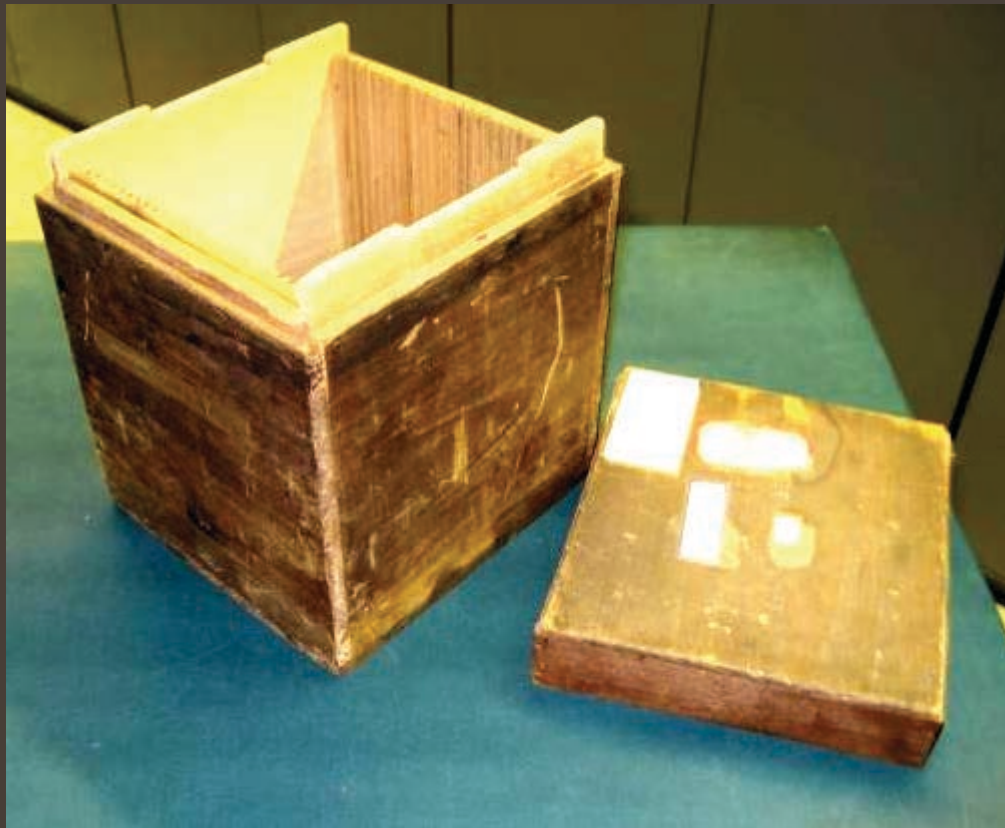
Before Exhibition (May 2005)



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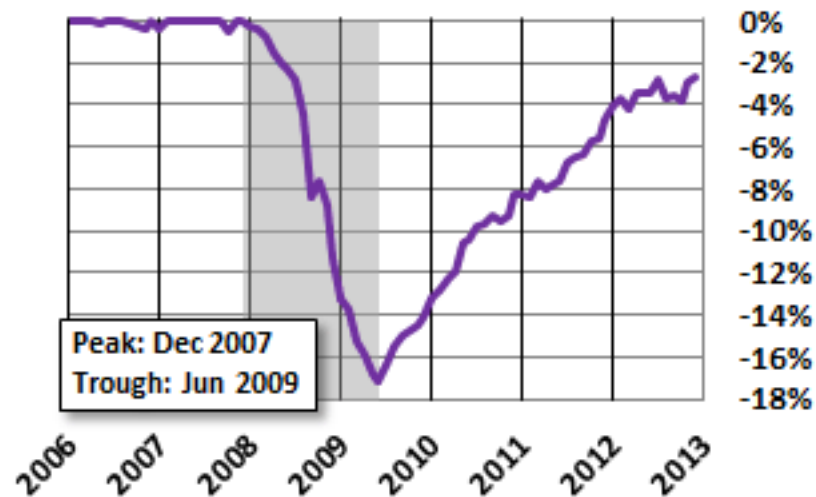




Left: an original wooden plate box that were the storage conditions for the plates prior to coming into the collection in 1974. The collection was housed in the manner on the right, after 1974. Plates were not cleaned prior to being individually housed in the mat-board packages.

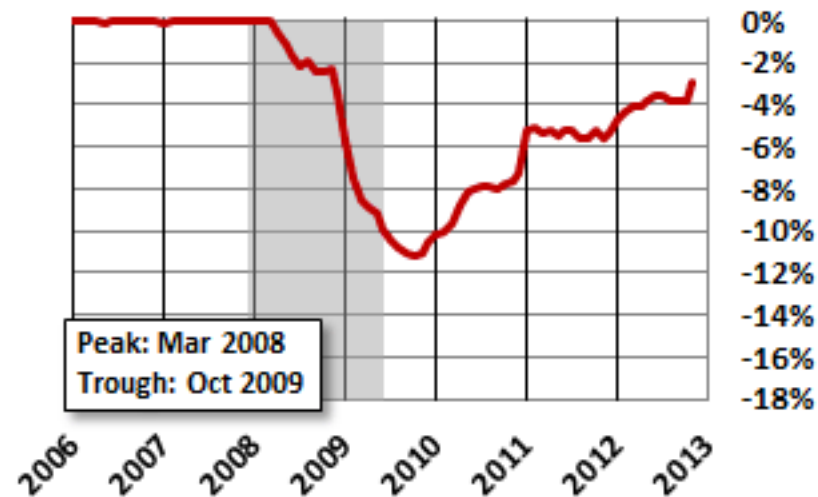
Right: Metal storage tray with a sequence of whole plate daguerreotypes by Southworth & Hawes in their previous storage arrangement.

Industrial Production

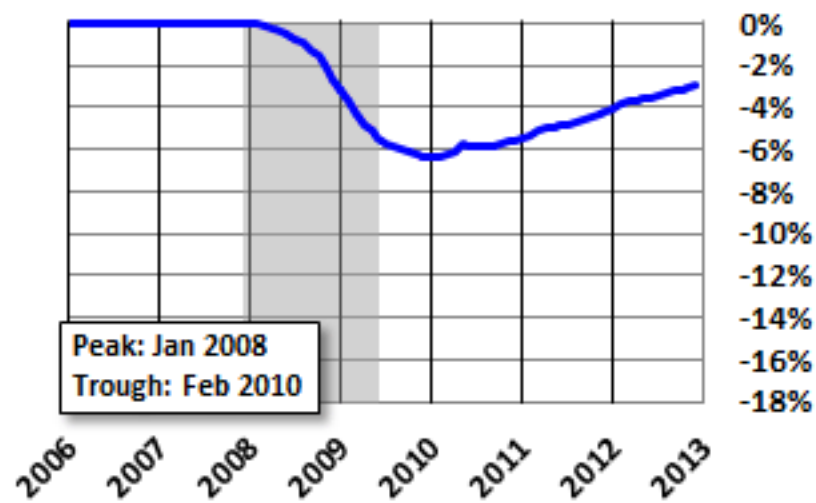


Real Income

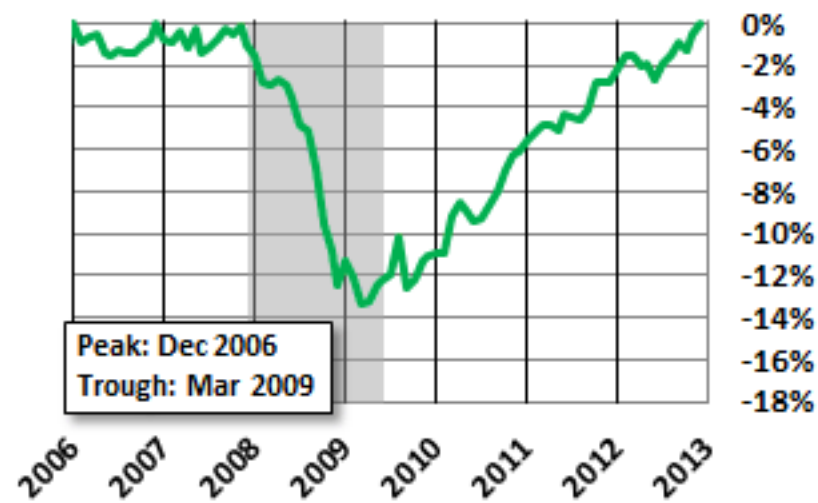
dshort.com



Nonfarm Employment



Real Retail Sales



Argon-charged prototype enclosure developed for the Save America's Treasures Grant



Prototype for the sixth plate format, built and tested August,
2011

[Eastman House holds 526 Southworth & Hawes sixth plates]

Examples of deterioration



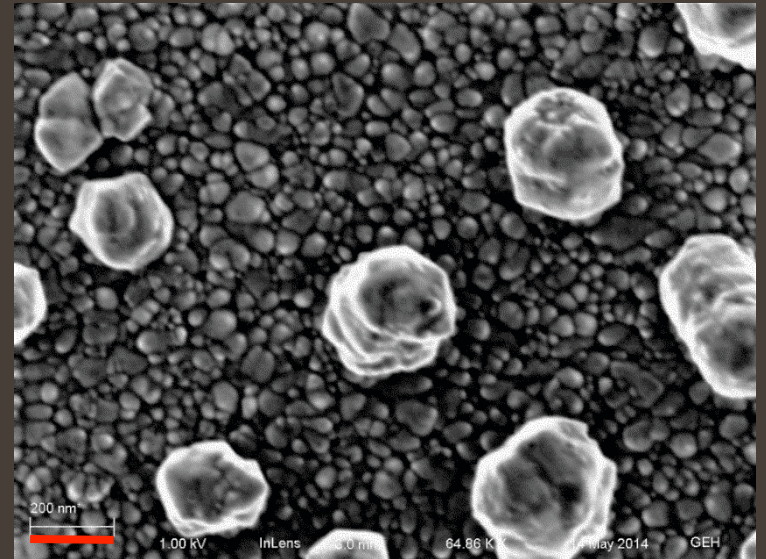
Southworth & Hawes 1974:0193:0796



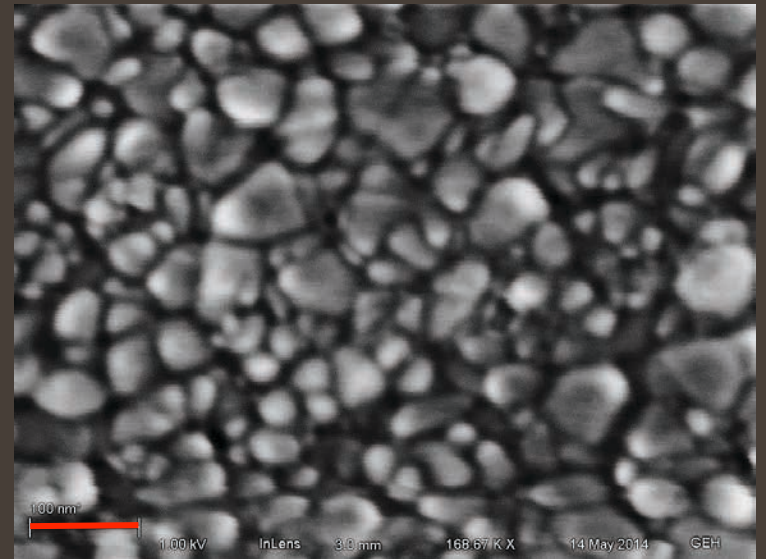
Southworth & Hawes 1974:0193:0401



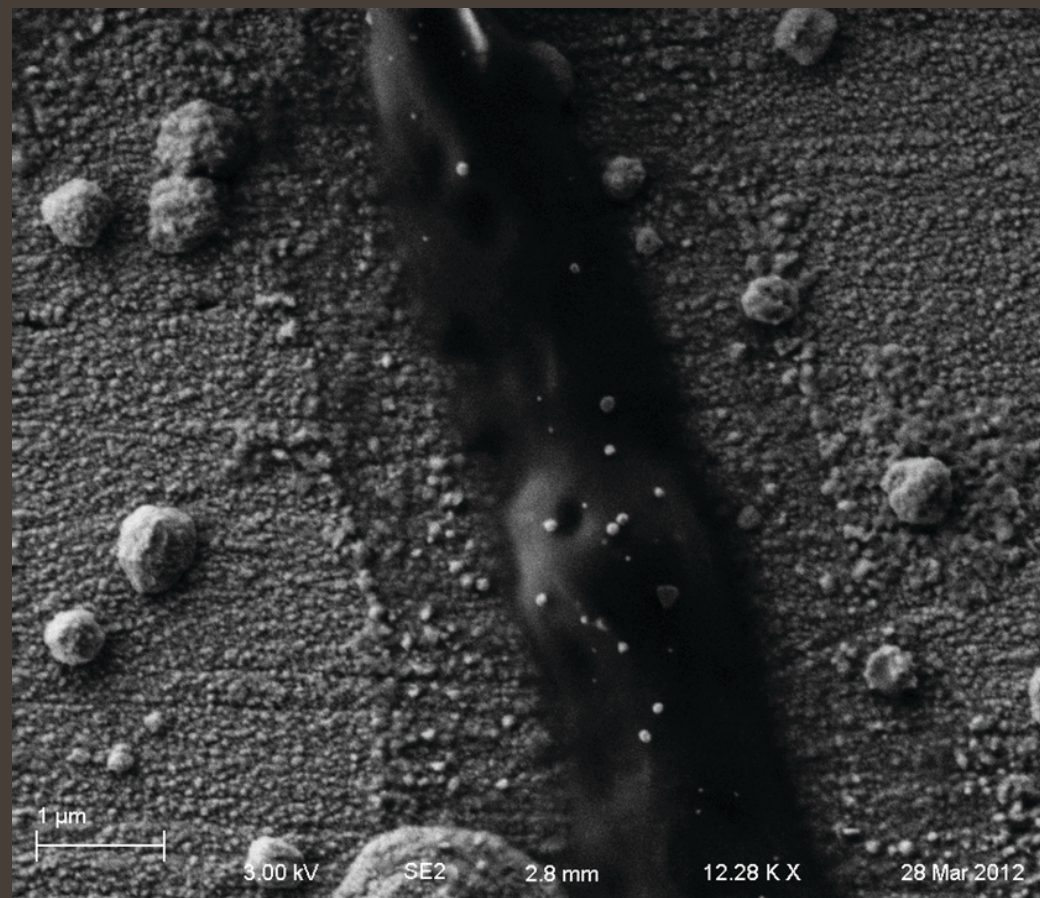
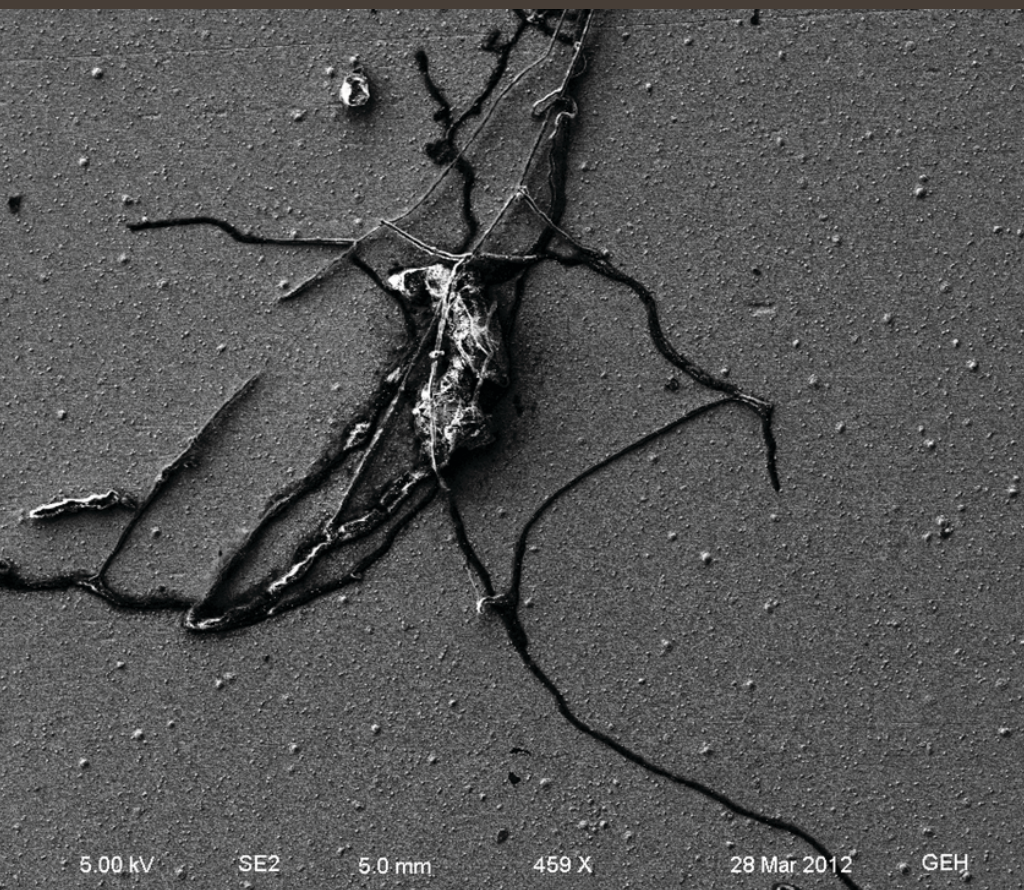
th Plate George Eastman House study collection
ated on verso in pencil: Oct 4, 1855

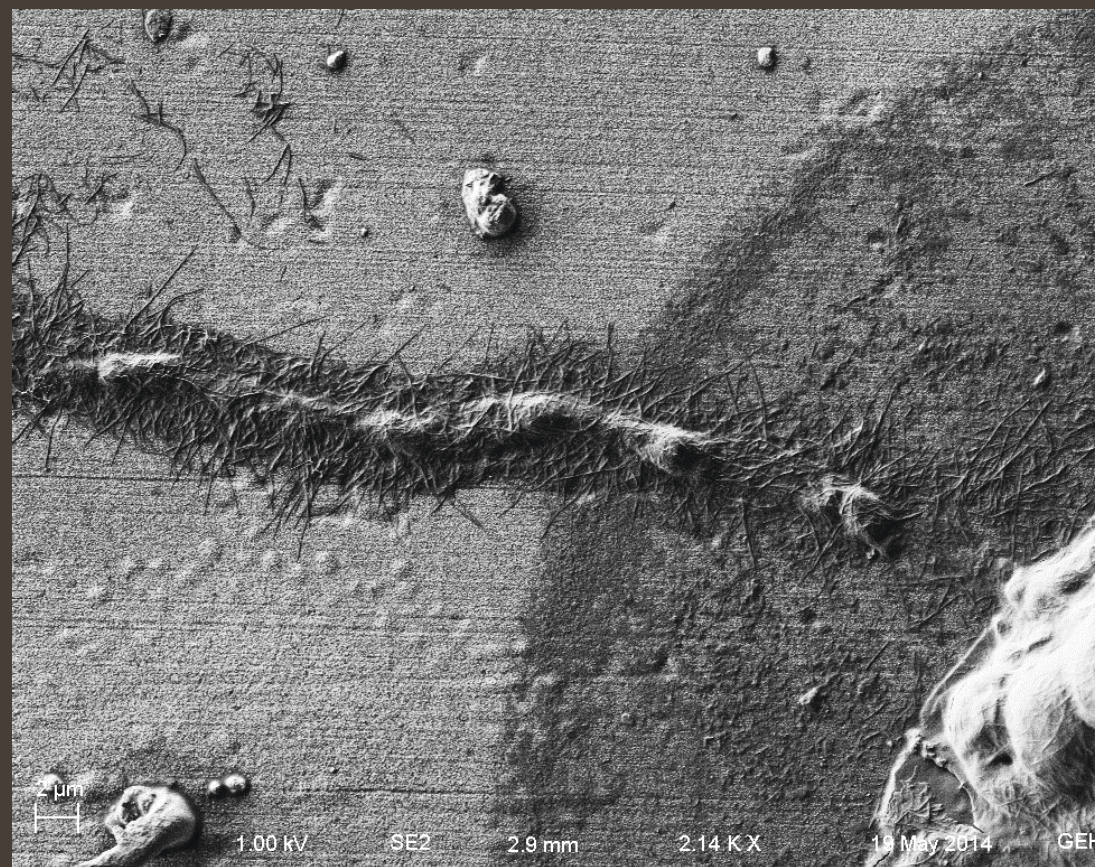
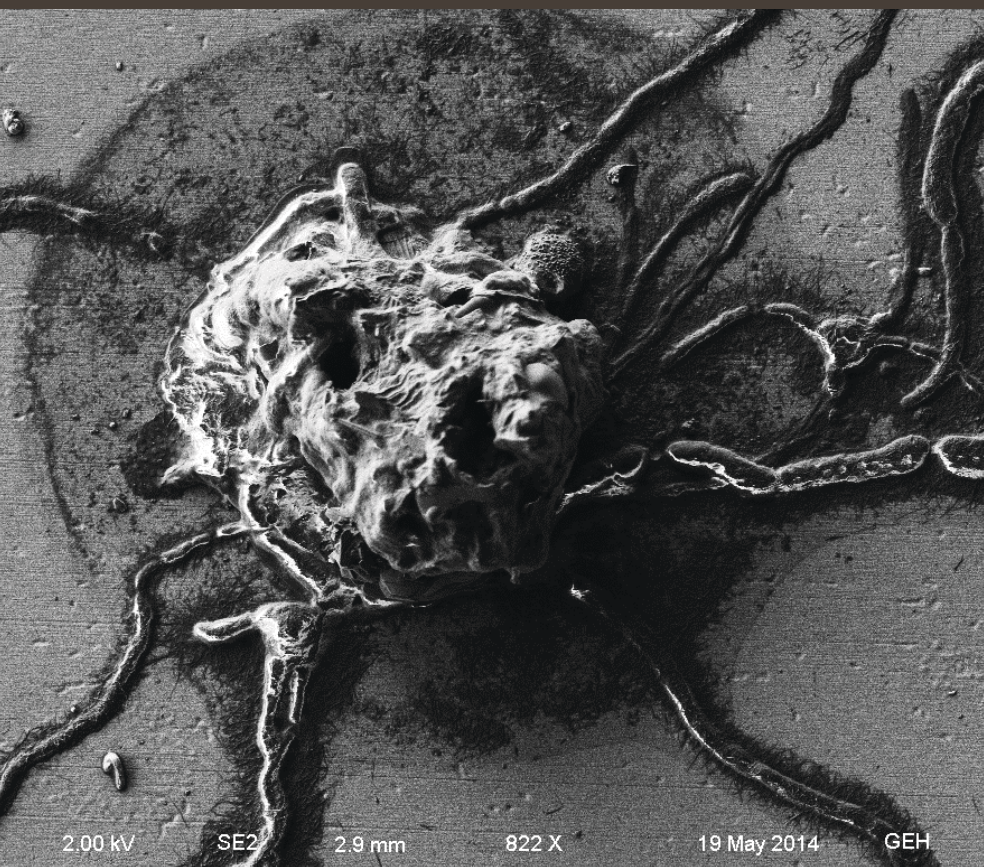


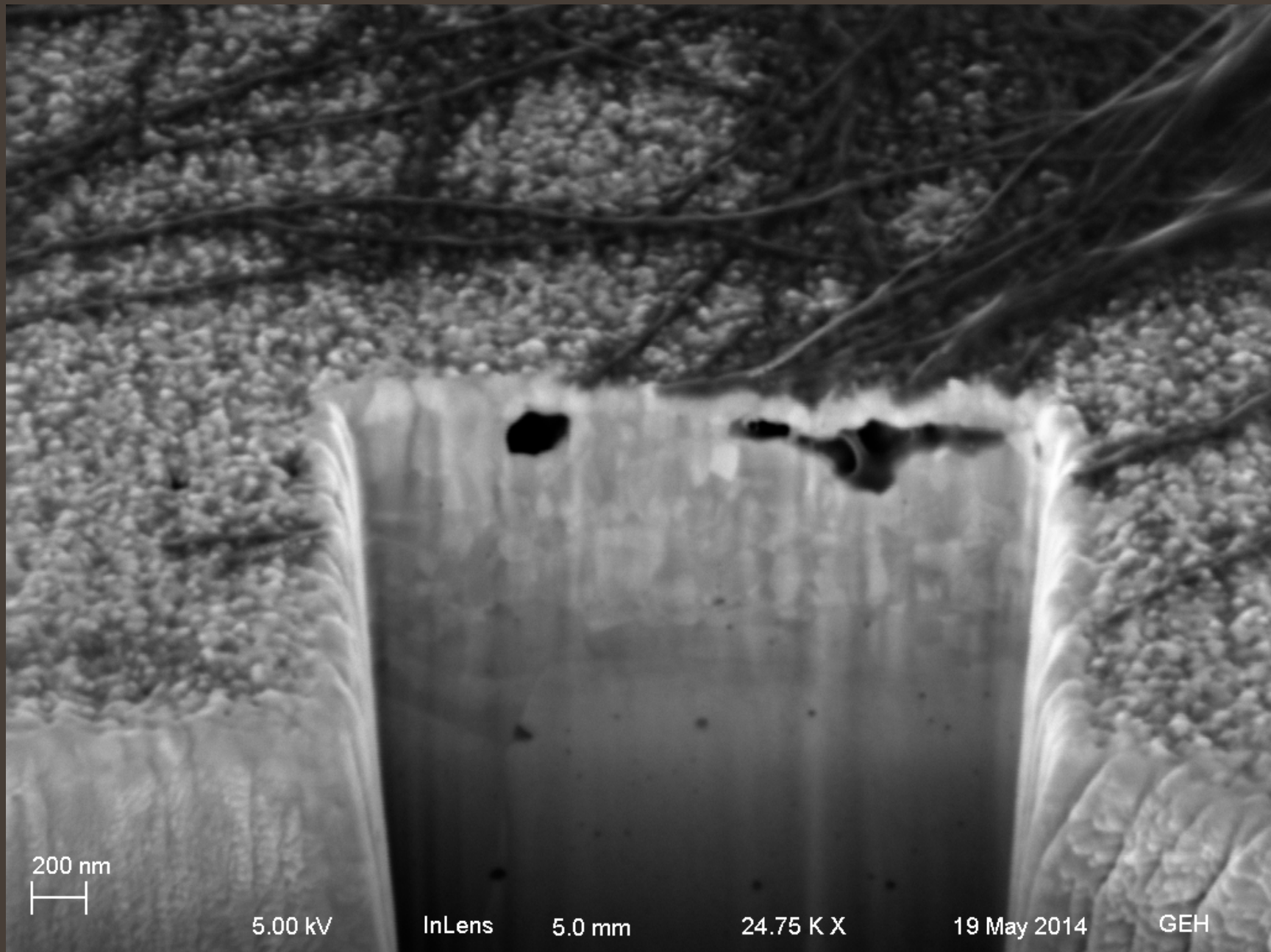
SEM: cluster of perfectly formed image particles
Magnification: 64,860 X, scale bar = 200nm



SEM: Nanostructure of a pristine surface
Magnification: 168,670 X, scale bar = 100nm







200 nm
|-----|

5.00 kV

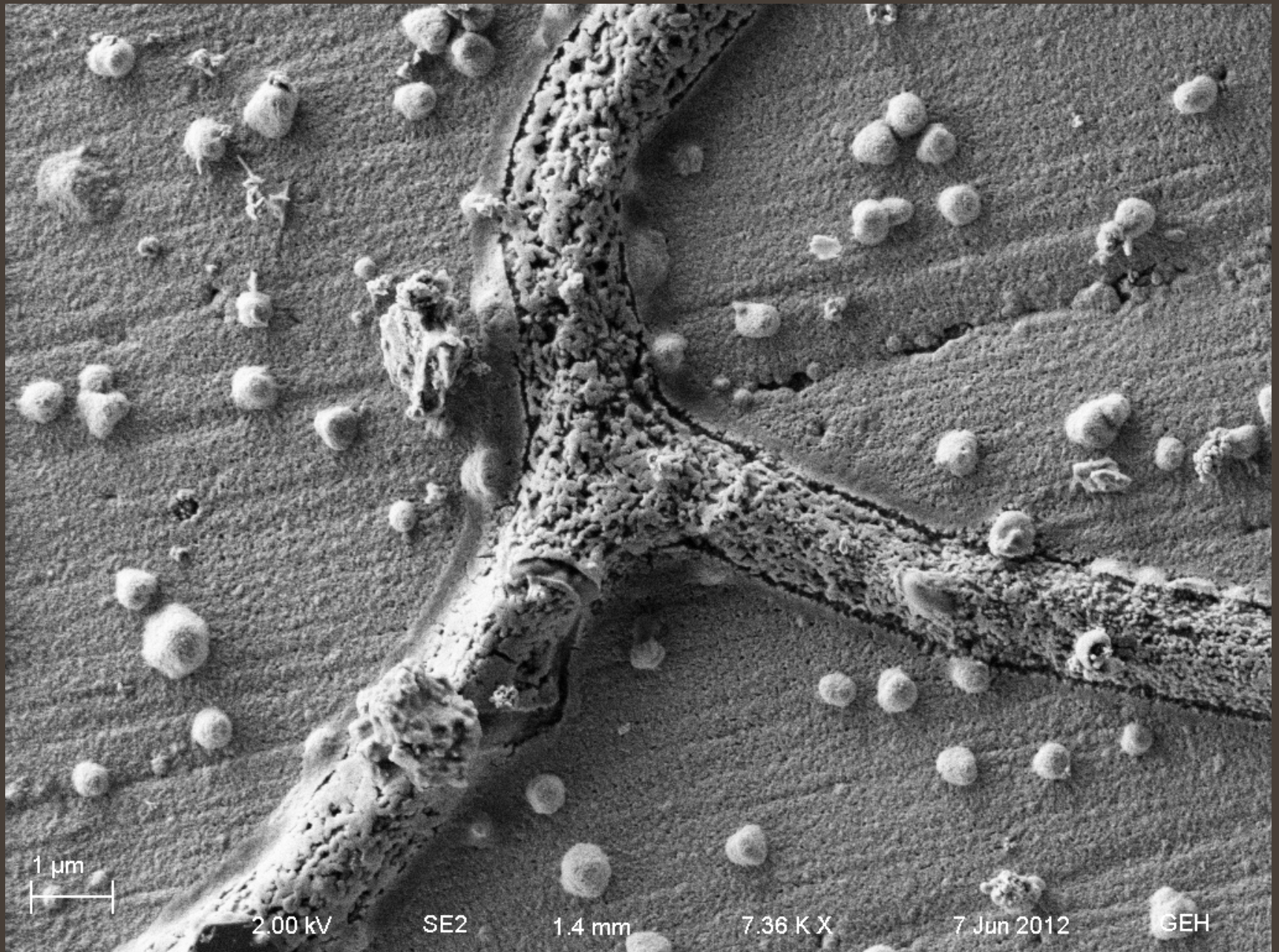
InLens

5.0 mm

24.75 K X

19 May 2014

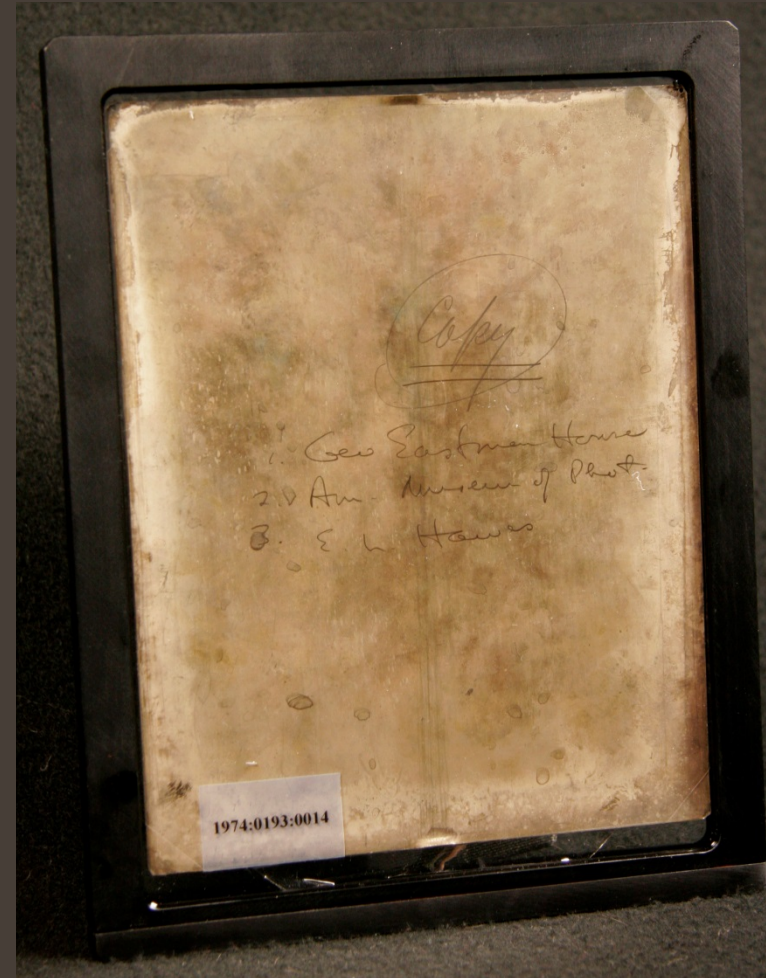
GEH



Daguerreotype of Daniel Webster

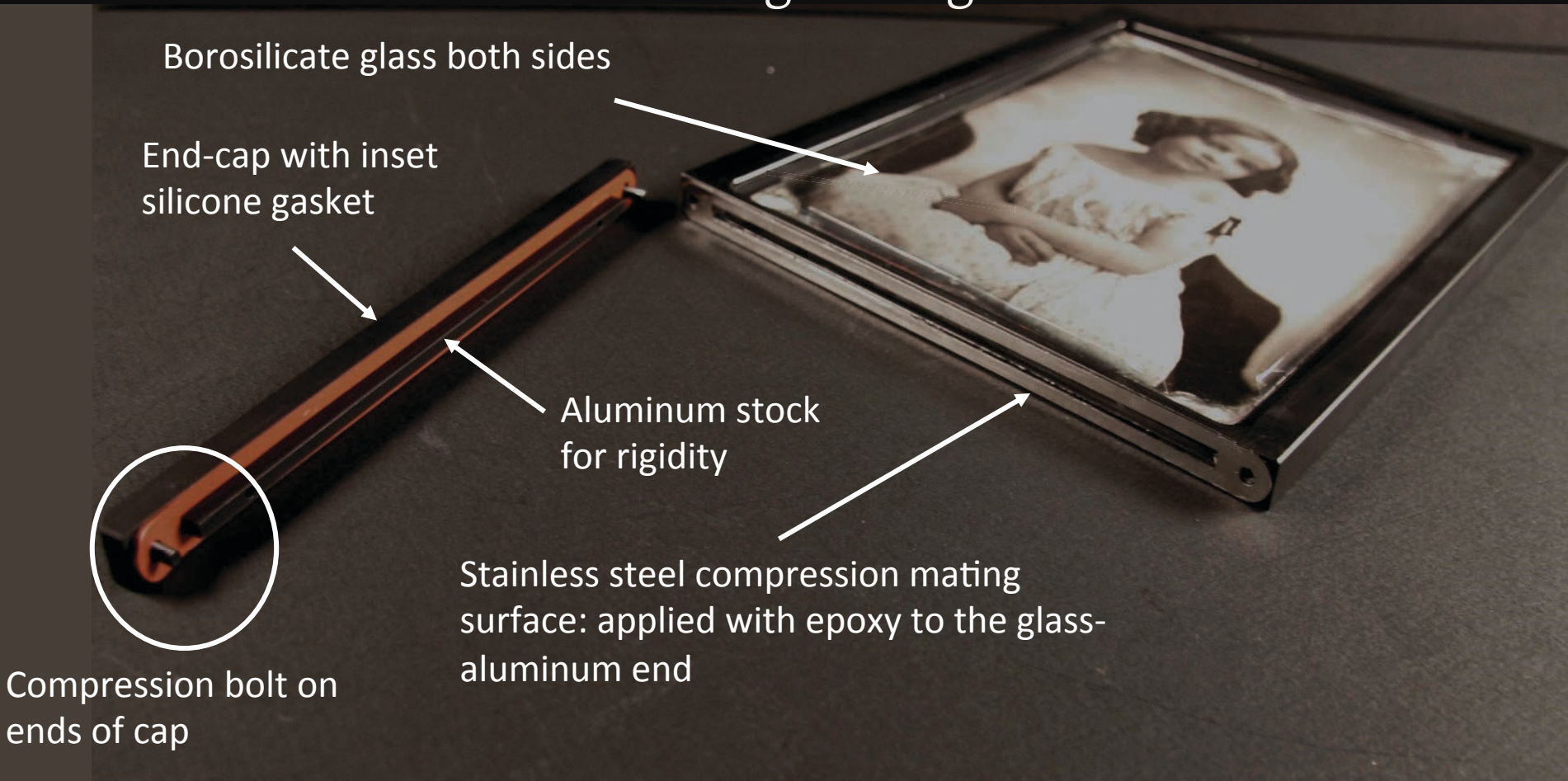
Albert Southworth & Josiah Hawes

George Eastman House International Museum of Photography & Film



Whole plate daguerreotype: 8.5" x 6.5" in hermetically sealed argon enclosure

frame is milled aluminum and anodized. It has two interior grooves to hold the 5mm glass. There is a compressed silicone gasket at the bottom of the groove along the sides, and the hermetic seal is accomplished on three sides by applications of epoxy (NASA low off-gassing vacuum applications); higher viscosity when assembled, and a lower viscosity one that flows in to seal any pinholes along the edge



Enclosure components ready for next steps in the production process.

- Left are 1/6th plate frames in early production phase –silicone rope gasket inserted into enclosure groove
- Middle and right are whole plate enclosures ready for the epoxy exterior sealant step

Enclosure components for all daguerreotype formats



Subassembly operations

Dedicated project team members: staff, temporary hires, and retired Kodak scientist –and dedicated museum volunteer, at work on project tasks

Conservation Department volunteer Dagmar Hüggen inserting silicone gaskets into the whole plate frames



Whole plates in their Preservation Slip Cases



Anti-Corrosion Barrier Laminations

• BluGuard-VCI™ • BluGuard-VCI-R™ • BluGuard-VCI-Clear™



Air Tight Barrier Cover and Crate

Machinery is packaged by hermetically through-bolting through the base of the barrier cover to a custom export pallet.



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Tax ID: 15-1327270
GSA Contract: GS-07F-0194Y

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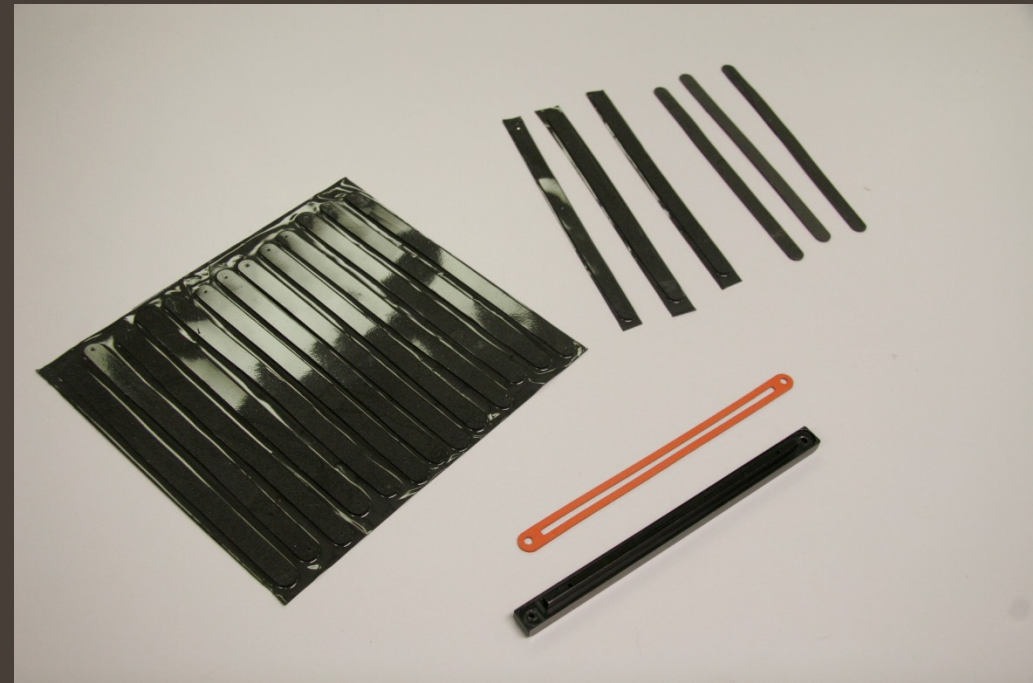
The modified silicone gasket operation



Components and mixtures prepared for casting on to ceramic tile into sheets



Modified silicone cast onto tile: thickness is controlled by volume pour



Cast sheets of gasket silicone; and die cut samples.

There is a double pour, so a thin membrane is like a flange at the very edge and compresses the silicone along a thin edge line of the frame.

Below, the orange gasket is purchased from a gasket company, and could not hold a seal.

12 Whole plate daguerreotypes in their final format



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