

Preserving Your Family History Research: Documents, Bound Volumes, & Photographs

Best Practices for Digitizing Family Papers and Photographs

D. Fitch Henry, Digital Archivist



American Ancestors®

A NATIONAL CENTER FOR FAMILY HISTORY, HERITAGE & CULTURE

Meet today's presenter



D. Fitch Henry
Digital Archivist



Voice of
Fitch Henry

*Digital Archivist: R. Staton Avery Special Collections,
American Ancestors*

Overview

- Planning
- Formats
- Photography key terms
- Scanning & Editing
- Demo



Planning

Käsebier, Gertrude, Stieglitz, Alfred, Blessed Art Thou Among Women, um 1899, Museum for Kunst and Gewerbe Hamburg, [Public Domain](#), Online: <https://www.mkg-hamburg.de/en/object/mkg-e00128735>

Planning Your Project

1. Review your collection
2. Choose hardware: Scanners, cameras, and other accessories
3. Become familiar with file formats and image properties
4. Plan for metadata
5. Preserve your digital files



Review Your Photographs



- What do you want to digitize and why?
- What do you plan to do with the images?
- How many documents do you have?
- What condition are they in?

Selecting Hardware

- Choose equipment that won't damage your documents
- The best options for home collections:
 - Flatbed scanner
 - Camera with a tripod or copy stand



Choosing Scanners and Cameras

- Scanners
 - 600 dpi optical resolution or higher
 - 2000-3000 dpi optical resolution for film
- Cameras
 - At least 10 megapixels (3872 x 2592 px)
 - need to be able to control image settings, like ISO, white balance, and shutter speed



Selecting Accessories

- Tripod
- Weights
- Pillows or book cradles
- Lightbox and/or lights





g. Käsebier
Happy Days (C.W. 25-X)

Formats

Prints

Albums

Negatives

Framed

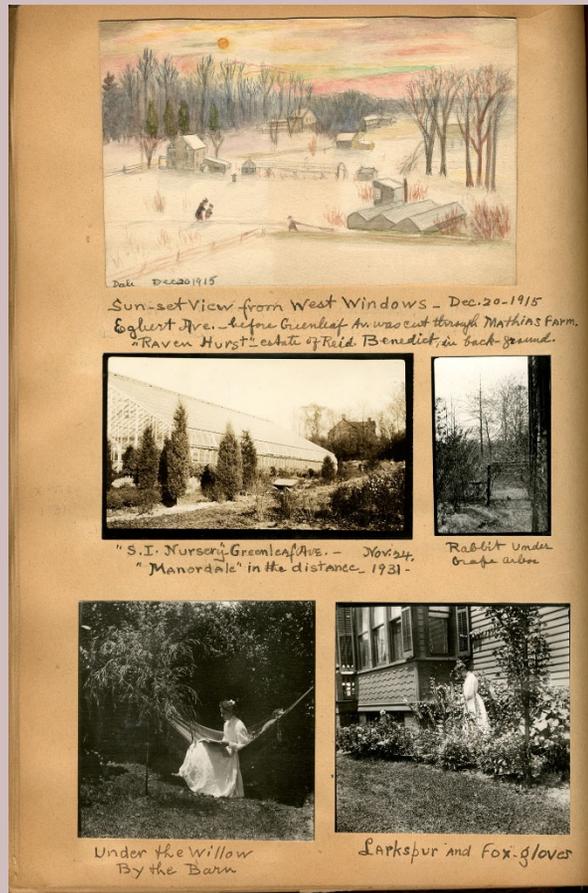
Käsebier, Gertrude, Stieglitz, Alfred, Happy Days, um 1903,
Museum for Kunst and Gewerbe Hamburg, Public Domain, Online:
<https://www.mkg-hamburg.de/en/object/mkg-e00128736>

Digitizing Photographic Prints

- A flatbed scanner is a good choice, depending on the size and condition of original document or photograph.
- A camera with a tripod or copy stand is another option, especially for large items.



Digitizing Photo Albums



- If the album opens flat, it can be digitized on a flatbed scanner.
- Albums with tight bindings should be digitized with a camera.

Negatives and Transparencies

- Some flatbed scanners have transparency adapters for 35 mm film and slides, medium format, and 4 x 5 film.



Negatives and Transparencies

- Cameras can also photograph film.
 - Use a lightbox to illuminate negatives and transparencies
- Specialized slide and negative scanners are also available.



Cased and Framed Photographs

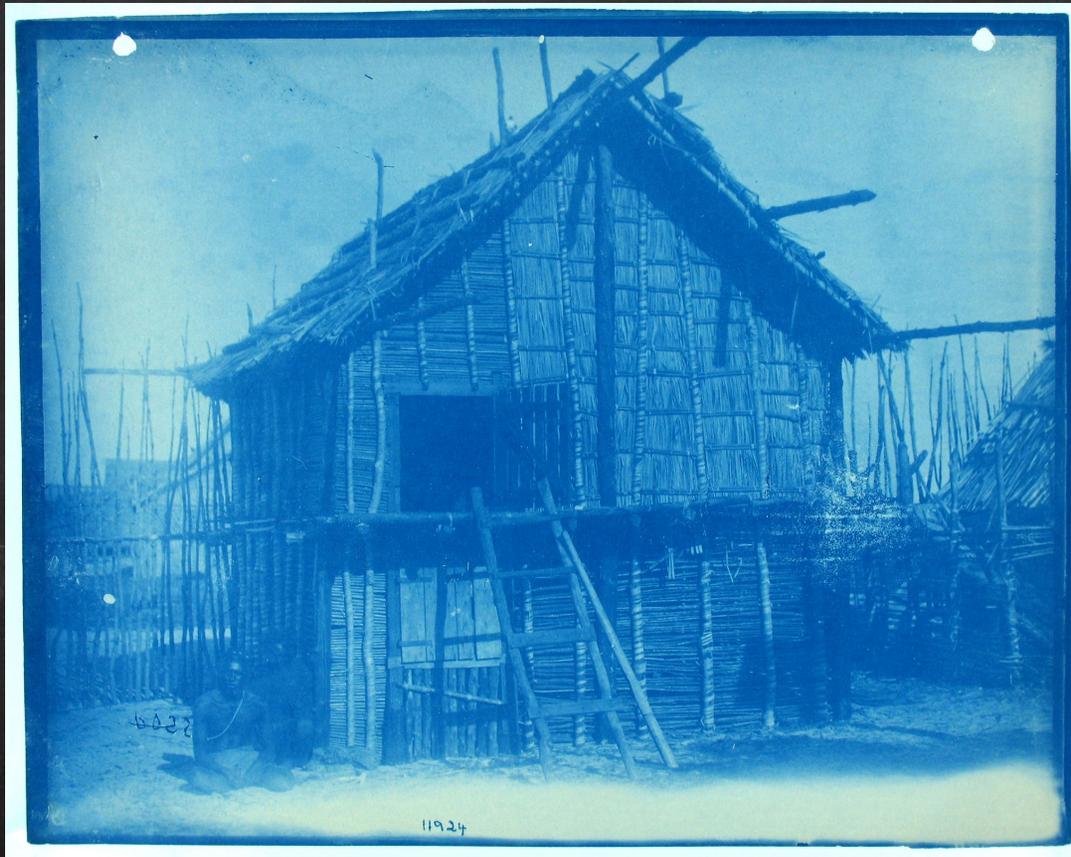
- Generally, camera is best
 - Experiment with lighting and angles
- If a fairly flat object, you can use a flatbed scanner
 - Experiment with background



An Indian amah with
on of the Atkinson babes.

Unbekannt, Mädchen mit Kopftuch, 1855, Museum for Kunst and Gewerbe Hamburg,
[Public Domain](https://www.mkg-hamburg.de/en/object/dc00044354), Online: <https://www.mkg-hamburg.de/en/object/dc00044354>

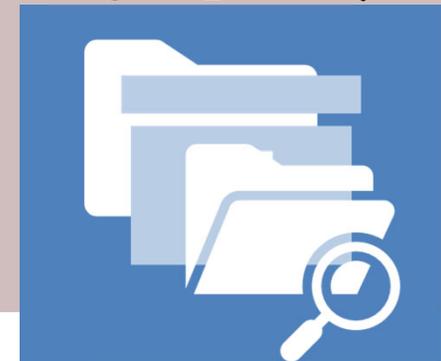
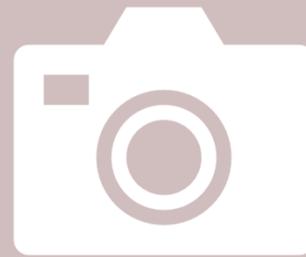
File Management



The Department of
Preparation: Thomas
Smillie's Photographic
Survey of the Smithsonian
(1890–1913)
<https://publicdomainreview.org/collection/smillie-smithsonian/>

File Formats // Image Settings

- Save original images in a file format that uses little or no compression.
 - TIFF preferred
- If scanning:
 - 300 ppi or higher, in color, no masks or rendering
- If using a camera, select the highest image quality



File Naming

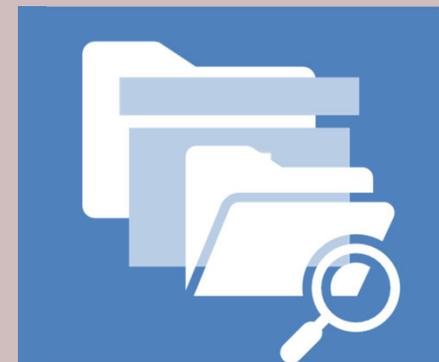
- Should be relatively short
- Use alphanumeric characters, hyphens, and underscores
- Use meaningful names
- Write dates in yyyyymmdd, so the filenames sort chronologically
- End with a 3-letter file extension (.tif, .jpg)


"Aunt With Our Puppy"


"Brown_Mary_189407.tif"

File Organization

- Keep original images in a master folder
- Put another copy in a working folder
 - Only edit the images in the working folder
- Photographs
 - Brown_family
 - master-images
 - working-copies
 - Gibson_family



Metadata

- Describes your documents, making them easier to find.
 - Description, Creator (if known), Date, and Keywords
 - Technical metadata: describes the image file (camera settings)



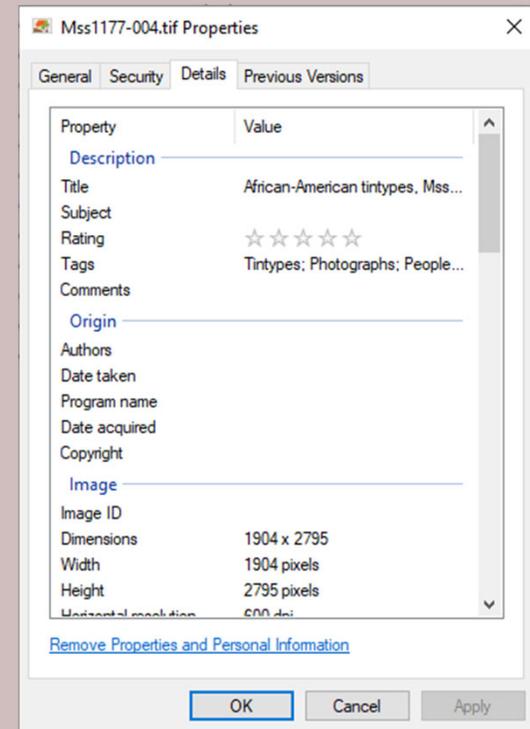
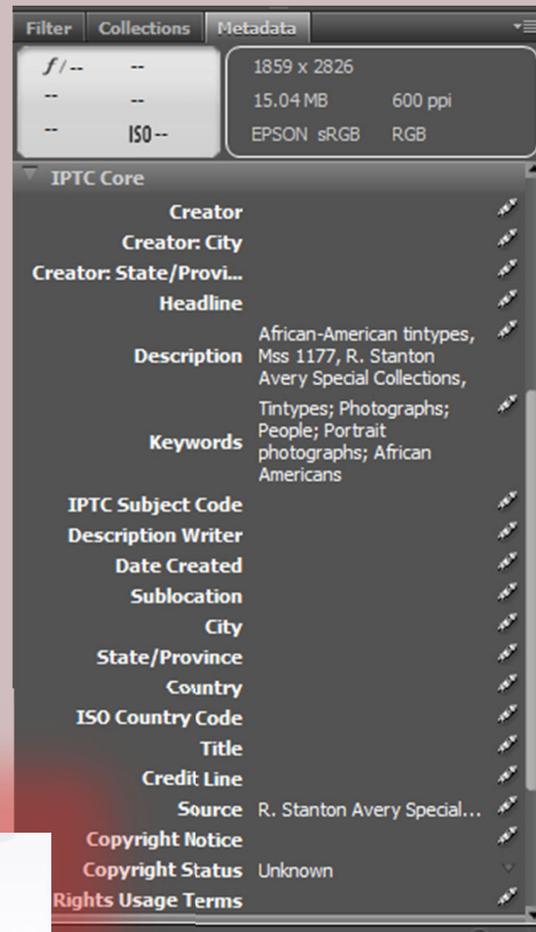
Archival File Name	Archival File Format	Date of Digitization	Archival File Size	Archival File Location	Archival File Resolution	File Name
MssA4470-001.tif	image/tiff	2024-11-25	123294536 bytes	\\NEHGS-FS\NEHGS_Stoc	600 dpi	MssA4470-001.jpg

Metadata

- Save your metadata...
 - Embedded metadata
 - Separate files, like a spreadsheet or text file
 - Software, like an image browser or digital asset manager

Embedded Metadata

- Embedded metadata stays with the file.
- Compatible with many different programs.



TRY!



Smith Family Papers Eaton Family School Teachers.tif

Description IPTC IPTC Extension Camera Data GPS Data Video Data Aud ▶

Document Title:

Author: "R. Stanton Avery Special Collections, NEHGS"

Author Title:

Description: Eaton Family School teachers, Harold W. Smith family collection, R. Stanton Avery Special Collections, NEHGS.

Rating: ★ ★ ★ ★ ★

Description Writer:

Keywords:

i Semicolons or commas can be used to separate multiple values

Copyright Status: Unknown ▼

Copyright Notice:

Copyright Info URL:

Powered By **xmp™**

Preferences Import...

Collection: William Lowe Papers
 Make/Model of scanner: Epson Scan 10000XL
 Scanning software used: Epson Scan Professional
 File format used/compression level: TIFF, compression unknown
 Date of digitization: 2011-05

Folder: Lowe\Photographs\France_October_1919
 photo1.tif Captain William Lowe, June 4, 1919 in camp at Brest, France written on back.
 photo2.tif William Lowe in uniform at barracks, 1919, identified by son Amos Lowe.

Folder: Lowe\Papers\1918\Russia_Archangel_1918
 letter1_envelope_front.tif Letter from William Lowe to his wife, Mary, dated May 5, 1918
 letter1_page1.tif first page of letter to his wife
 letter2_envelope_front.tif Letter from William Lowe to his mother, Clara, dated June 3, 1918
 letter_2.tif 1 page letter to his mother, front only

Folder: Lowe\Papers\Diary
 cover.tif Cover of Lowe's war diary
 inside_cover.tif Inside cover of diary, with Lowe's name and signature
 scan1.tif Diary pages 1 and 2 scanned together

Bentley Historical Library Donor-Digitized Metadata Spreadsheet

Collection Title: William Lowe Papers
 Date range of original materials: 1918-1919
 Collection description: Photographs, papers and a diary from Captian William Lowe, 339th Infantry, who served in France and Russia during World War I.

Note: * denotes a highly recommended field

Digitizing process:

*Make/Model of Scanner: Epson Scan 10000XL
 *Scanning software used: Epson Scan Professional
 *File format Used: TIFF, compression unknown
 *Date of Digitization: 2011-05

Digitized Material:

*Folder	*File name	*Title	*Creator	Location	Description/subject	Date of creation (original)	Physical format (original)	Contributor	Copyright
France_October_1919	photo1.tif	Captian William Lowe in camp, Brest, France, June 4, 1919	unknown	Brest, France	View of William Lowe in uniform, outside of camp barracks, with other 339th Division officers present.	1919/06/04	Photograph		unknown
1918/Russia_Archangel_1918	letter1_page1.tif	Letter from William Lowe to his sister, dated November 15, 1918	Lowe, William	Archangel, Russia		1918/11/15	Letter		

Metadata Examples

Digital Preservation

- Follow the 3-2-1 rule:
 - 3 copies
 - on at least 2 types of media
 - 1 copy stored in a different location
- Check your images at least once a year
- Copy your files to new media every 5 years



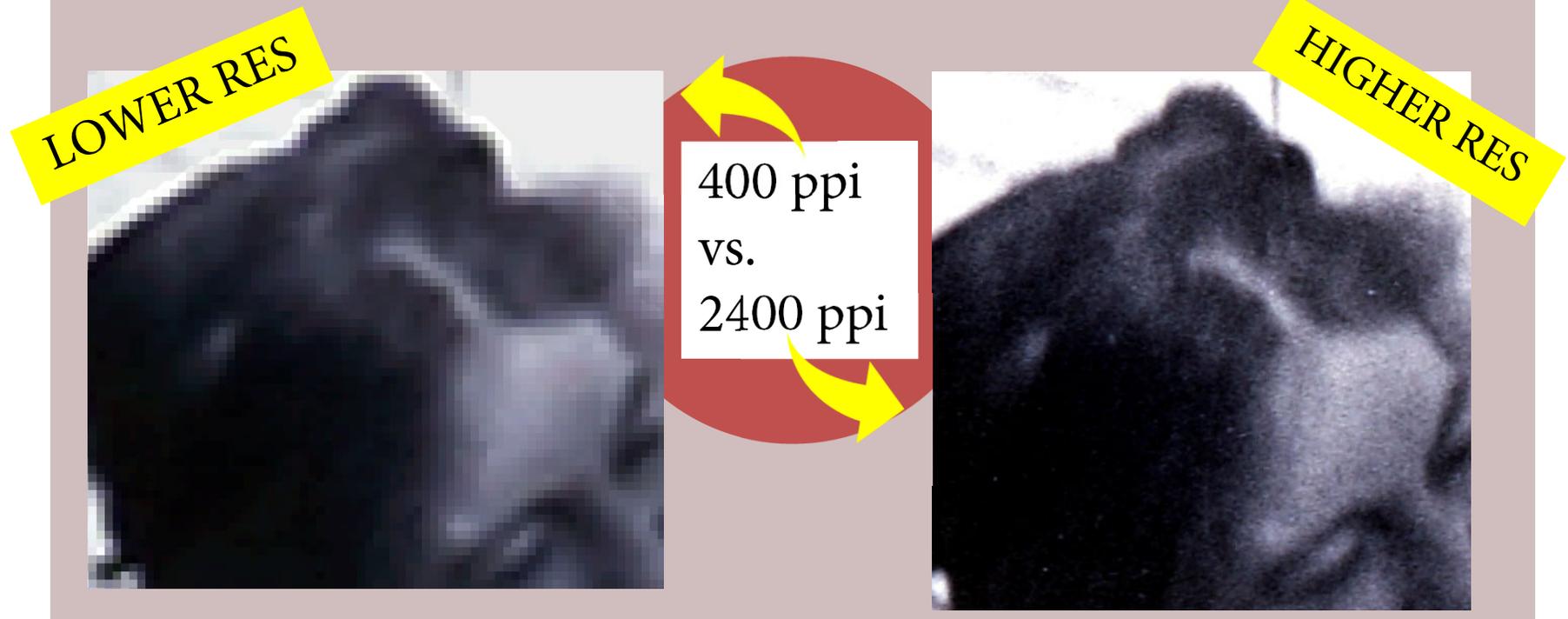


Key Terms in Photography

The Language of Flowers: An Alphabet of Floral Emblems (London; New York: T. Nelson and Sons, 1857)

Definitions: Resolution

The density of elements, such as **pixels**, within a specific distance, most commonly an inch. Affects the amount of detail you can see in a digital image.



Source: <https://blogs.loc.gov/thesignal/2013/03/what-resolution-should-i-use-part-3/>

Definitions: Pixel Dimensions



1116 × 746 pixels

300 pixels

3.72 in. x 2.49 in.
maximum printable size



400 × 278 pixels

300 pixels

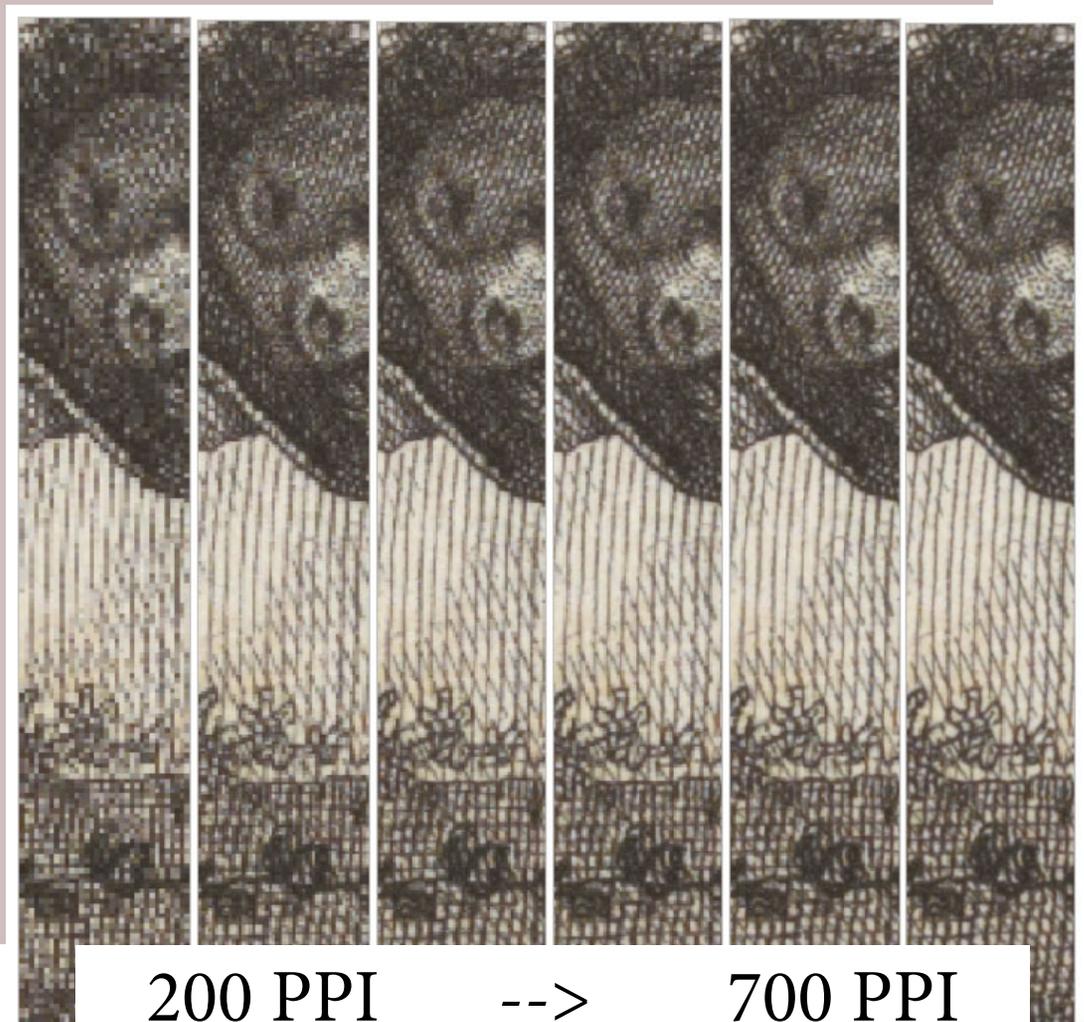
1.33 in. x 0.93 in.
maximum printable size



Definitions: DPI and PPI

- ppi (pixels per inch)
- dpi (dots per inch)

Image Source:
<http://www.ala.org/alcts/resources/preserv/minimum-digitization-capture-recommendations>





Top: Red boxes indicate edge features used to calculate maximum image information content.

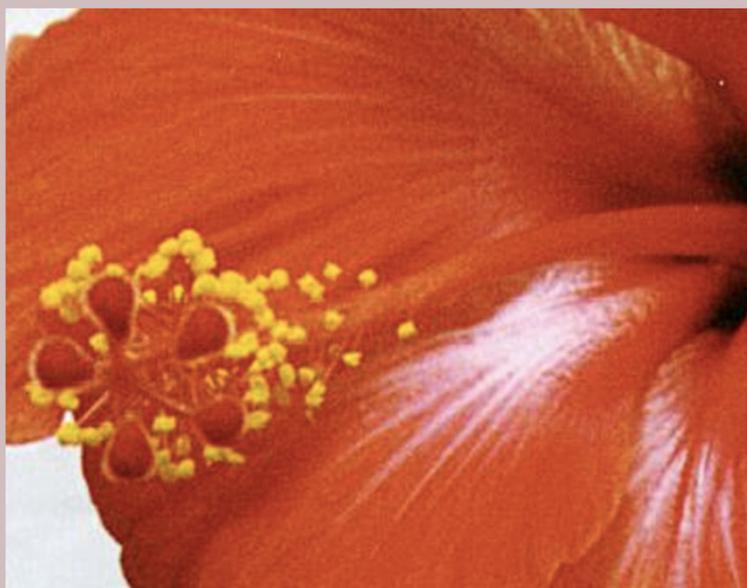
Bottom: Enlarged detail version extracted from the circled area in the top image showing no difference in image information at 3000 ppi, 1500 ppi, and 1500 ppi interpolated up to 3000 ppi. From an 8x10-inch glass plate dating from 1906, in the collections of the Bancroft Library, University of California, Berkeley.

Source: Information or Artifact: Digitizing Photographic Negatives and Transparencies, Part 2, <https://blogs.loc.gov/thesignal/2011/10/information-or-artifact-digitizing-photographic-negatives-and-transparencies-part-2/>

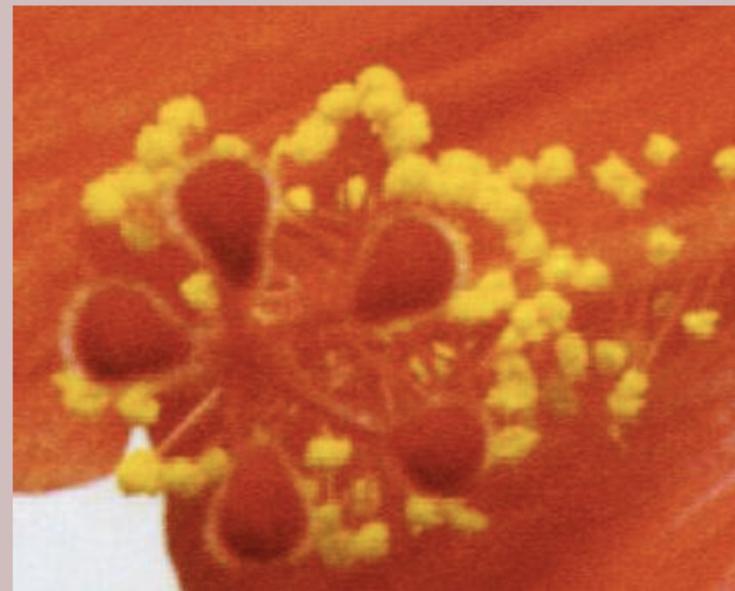
Resolution Example: *Higher is not always better*

Definitions: Optical Resolution

The resolution at which a capture device, such as a scanner or digital camera, is capable of capturing pixel values based on actual samples taken from an original to construct an image.



Maximum optical resolution (300 ppi)



Interpolated resolution (600 ppi)

Source: <https://www.scantips.com/interpol.html>

Definitions: Bit Depth

The number of bits used to describe each pixel in an image.



1-bit = 2 shades



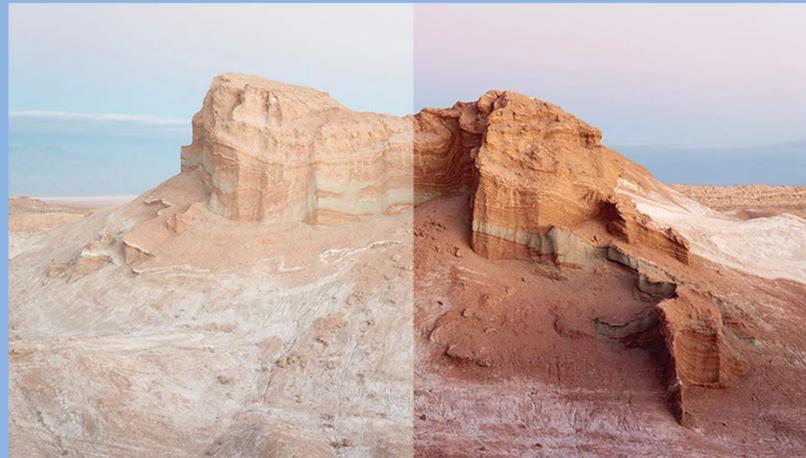
8-bit = 256 shades

Source: <https://archivesoutside.records.nsw.gov.au/digitising-your-collection-part-3-technical-specifications/>

Definitions: RAW files

- The unprocessed file that is produced by a digital camera.
- The highest quality image that a camera can produce, with the greatest amount of data.
- Requires additional editing before it can be used.

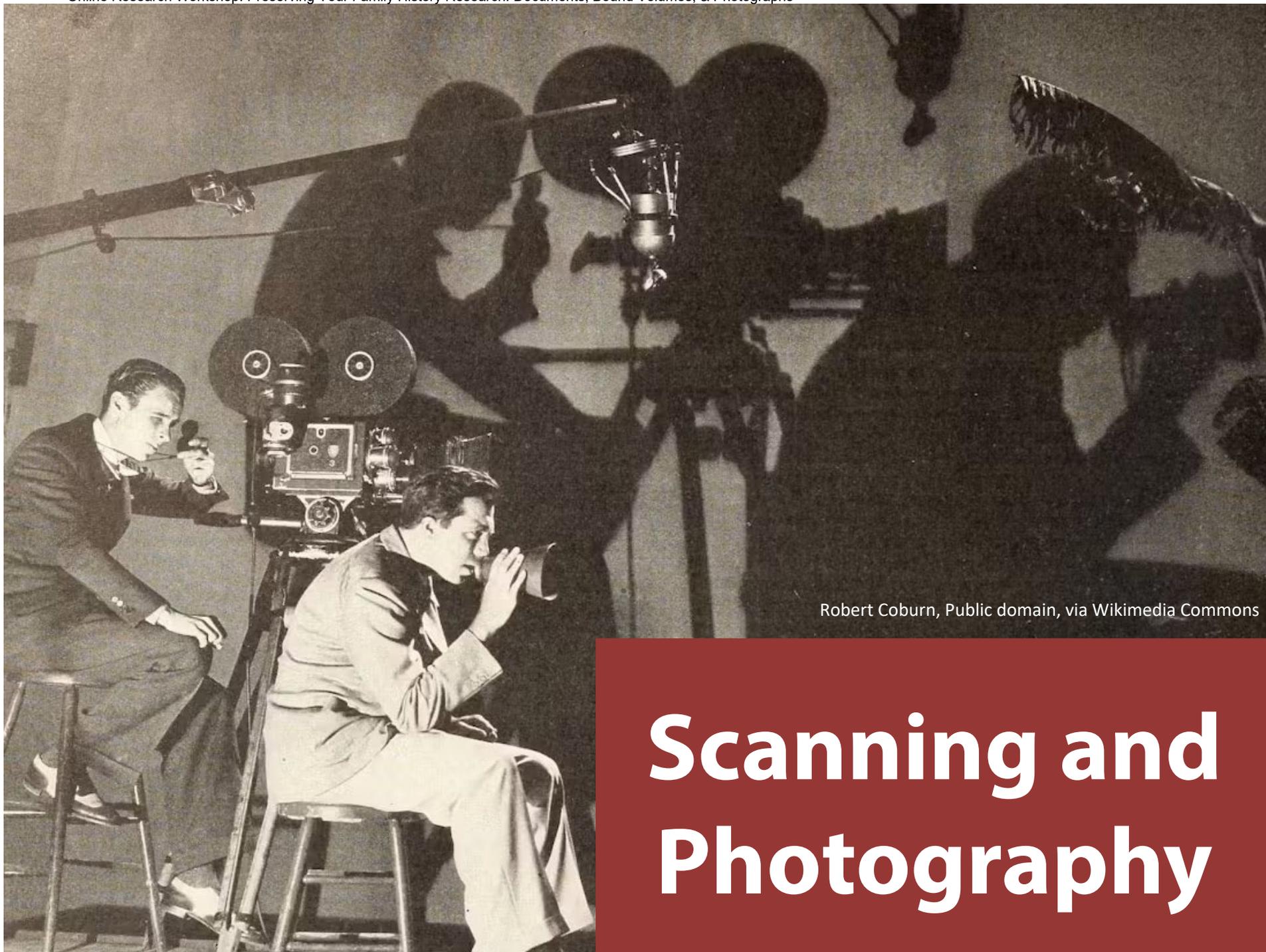
RAW



JPEG
(processed)

Source: *When to use raw vs. JPEG*, Adobe, 2022 via https://helpx.adobe.com/ph_fil/lightroom-cc/how-to/raw-vs-jpeg.html

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Robert Coburn, Public domain, via Wikimedia Commons

Scanning and Photography

Recommended Scanning Settings

Document type	Minimum Resolution	Color Mode	Notes
Photographs (8 x 10 inches or less)	<u>400 ppi</u>	grayscale (8 bit) or color (24 bit)	Image should be 4000 pixels on long edge; adjust resolution accordingly.
Photographs (8 x 10 to 11 x 14 inches)	<u>400-600 ppi</u>	grayscale (8 bit) or color (24 bit)	Image should be 6000 pixels on long edge.
Photographs (over 11 x 14 inches)	<u>600 ppi</u>	grayscale (8 bit) or color (24 bit)	Image should be 8000 pixels on long edge.
Photo albums	<u>400 ppi</u>	color (24 bit)	Scan at higher resolution if editing or printing individual images on the album's page.

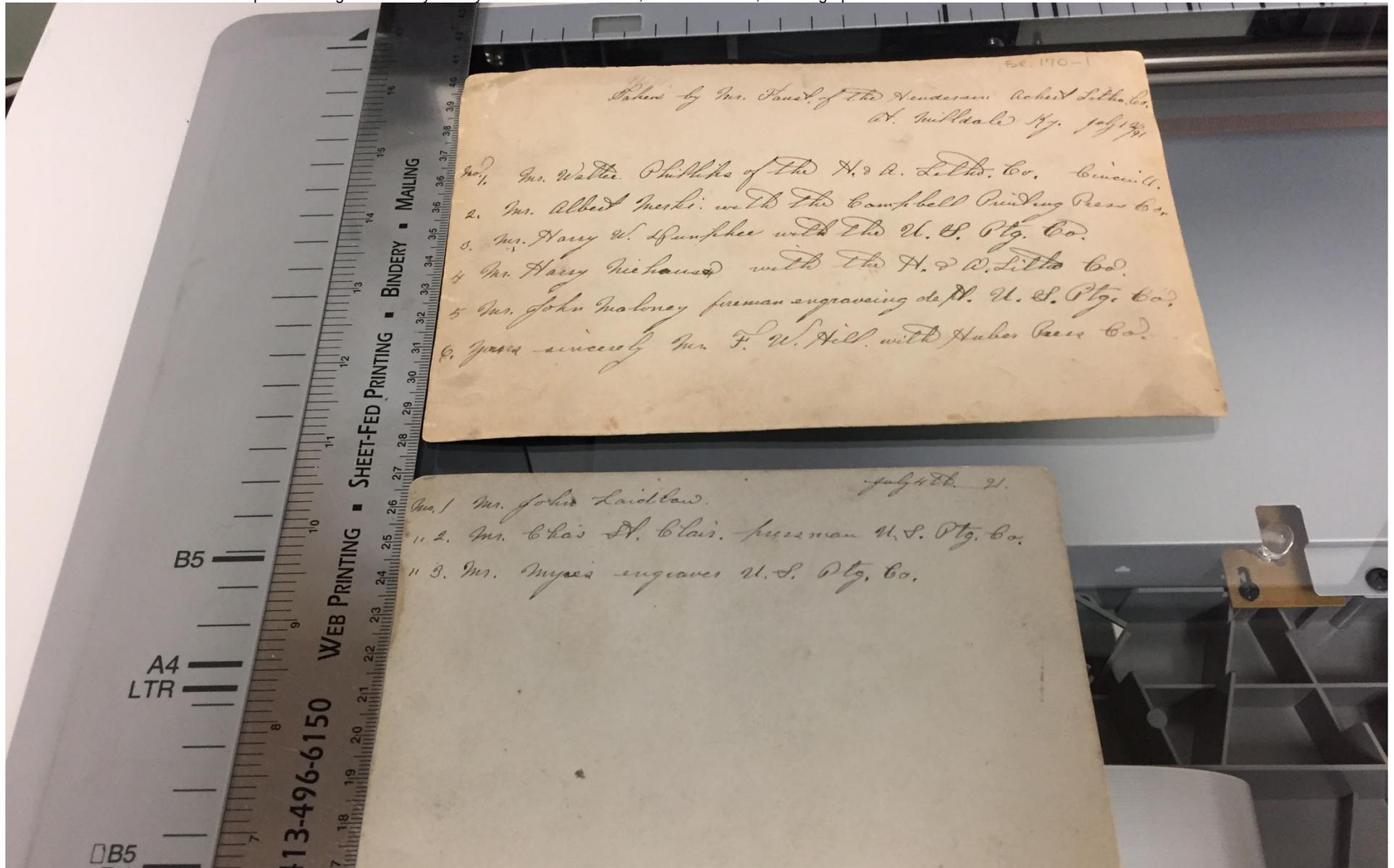
Scanning Settings, continued

Document type	Minimum Resolution	Color Mode	Notes
Photographic film, including negatives and slides (4 x 5 inches or less)	<u>800-2800 ppi</u>	grayscale (8 bit) or color (24 bit)	Image should be 4000 pixels on long edge.
Photographic film (4 x 5 to 8 x 10 inches)	<u>800-1200 ppi</u>	grayscale (8 bit) or color (24 bit)	Image should be 6000 pixels on long edge.
Photographic film (over 8 x 10 inches)	<u>800 ppi</u>	grayscale (8 bit) or color (24 bit)	Image should be 6000 pixels on long edge.

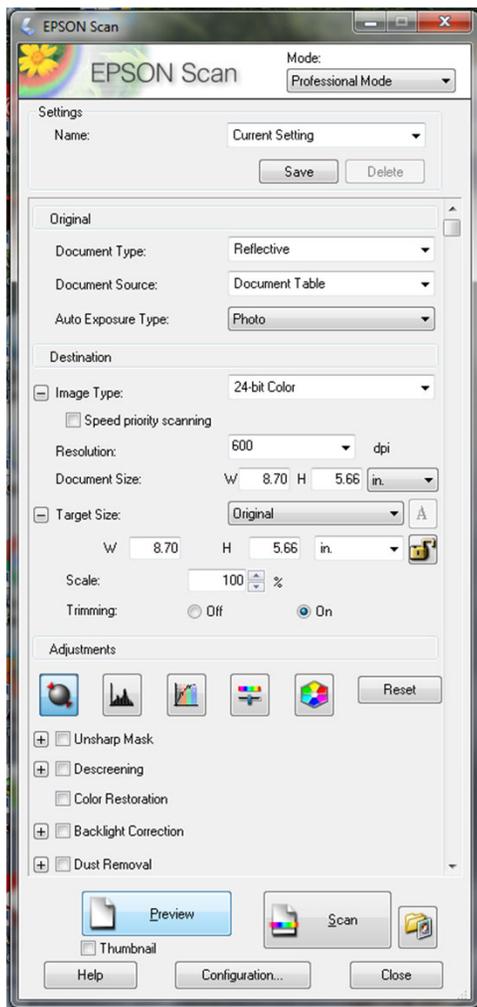
Based on: ALCTS Minimum Digitization Capture Recommendations, June 2013,
<http://www.ala.org/alcts/resources/preserv/minimum-digitization-capture-recommendations>

Using a Flatbed Scanner

1. Clean scanner glass with a lint-free cloth, dampened with water.
2. Wipe photos with a dry, anti-static cloth.
3. Position photograph(s).
4. Select image settings.
5. Preview and scan.



Preparation and positioning documents



Preview and image settings

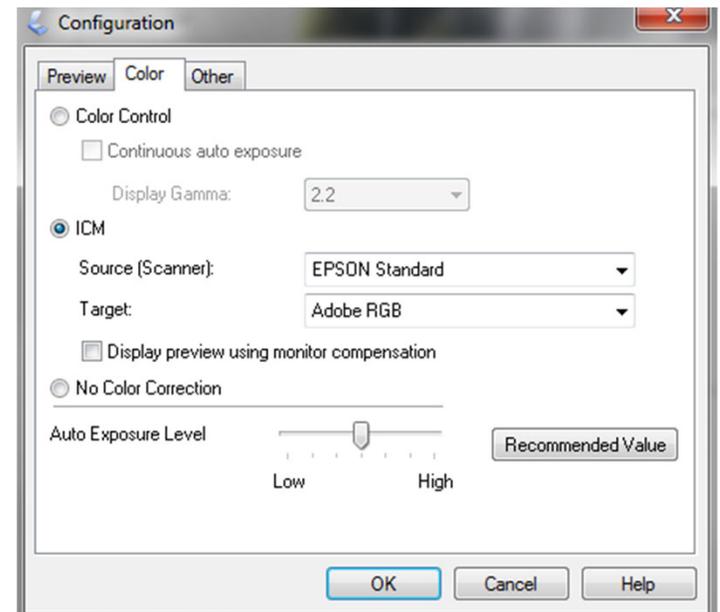
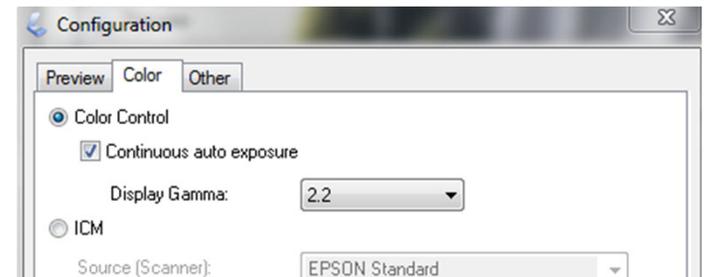
Auto Exposure
Off



Auto Exposure
On



Auto Exposure



Color Settings

Scanning Negatives and Film

1. Clean scanner and film.
2. Place film or slides in film holders and put on scanner.
3. Select image settings.
4. Preview.
5. Select each frame and adjust for color and exposure as necessary.
6. Scan final image(s).

Preparing the Scanner and Film

- Wipe both top and bottom glass to remove dust and fingerprints.
- Handle film with gloves and hold by the edges.
- Use a brush or air blower to clean film before scanning.
- Follow scanner directions when placing film.



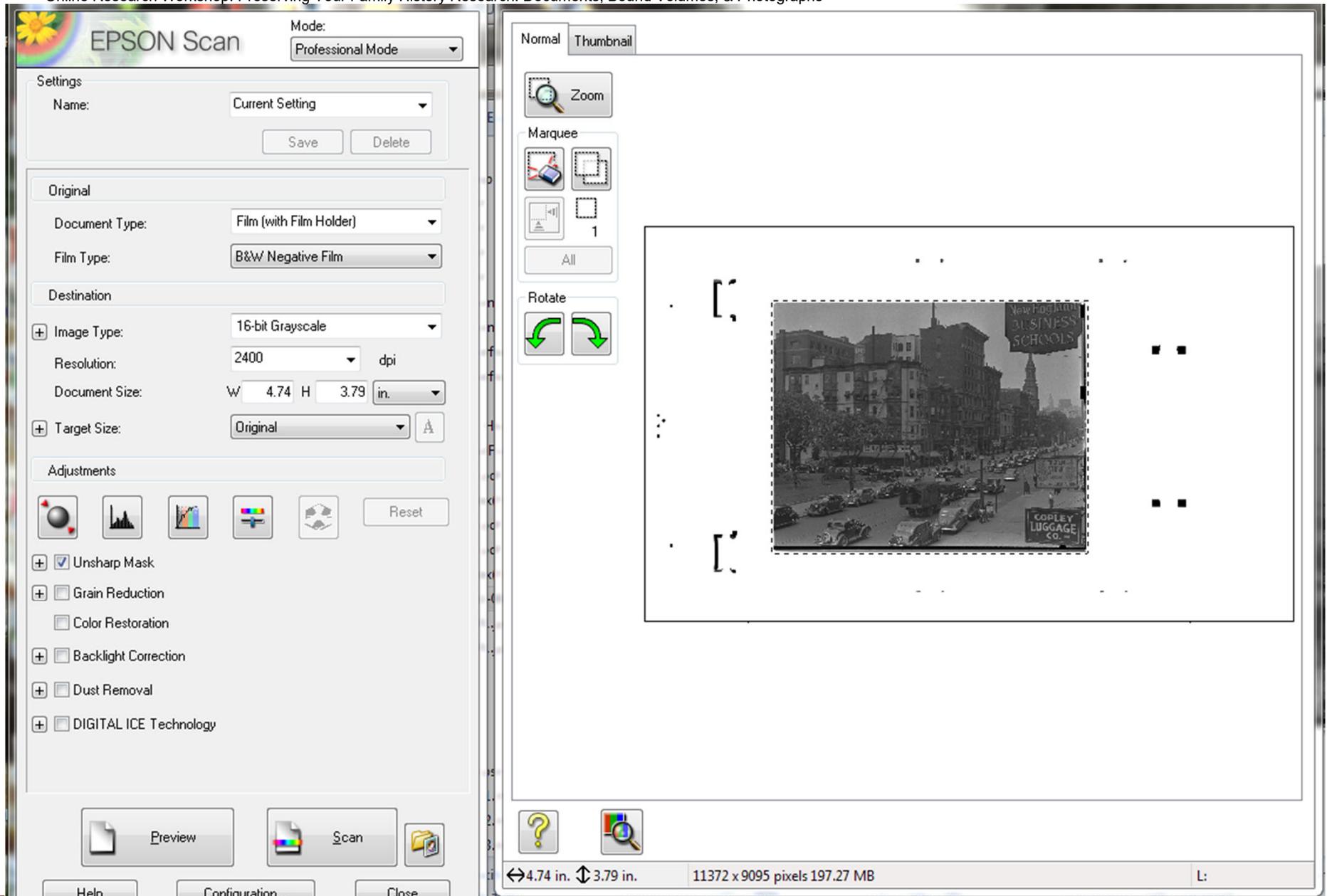
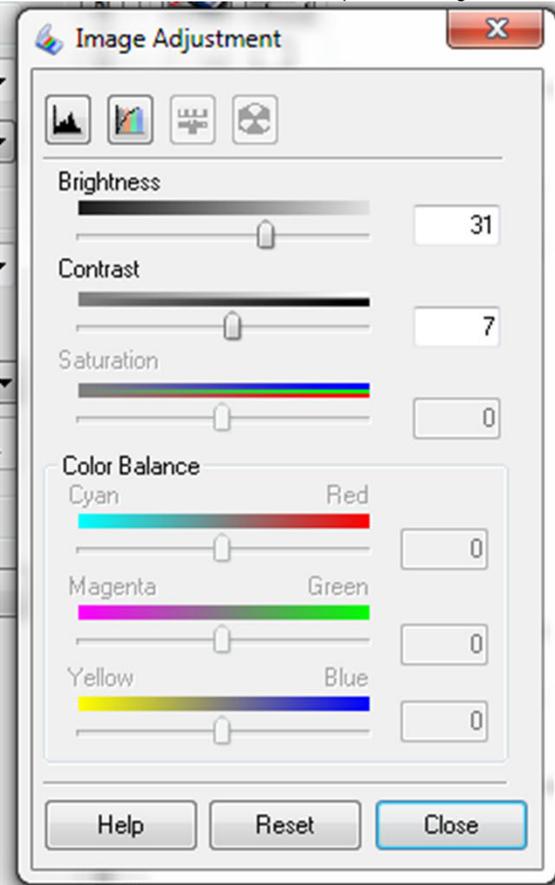


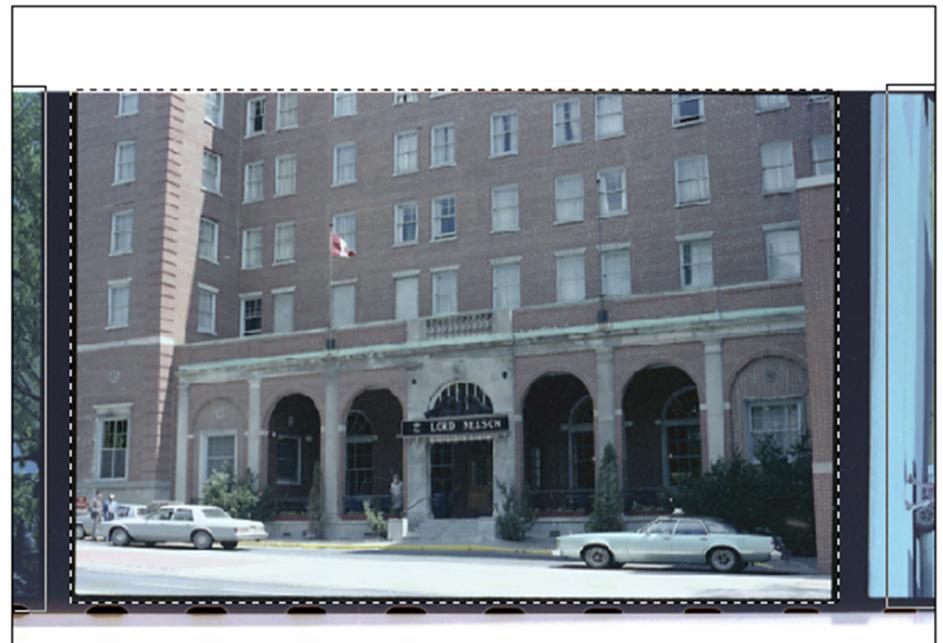
Image Settings and Preview



Adjusting for exposure and color



For best results with color negatives, edit the preview before scanning, and do additional color correction in an image editor later.



Adjusting color negatives



Scanning color negatives in Silverfast

Using a Camera

1. Set up background for photographs.
2. Set up and turn on lights.
3. Set up tripod or stand, and attach camera.
4. Adjust camera and tripod so that the document will fill most of the camera viewfinder.
5. Set up document.
6. Test focus and exposure.
7. Take photographs.

Using a Camera



- Background color should be neutral
- Consider your lighting
- Recommended camera settings:
 - ISO 100-200
 - Aperture priority mode
 - f8-11
 - Highest image quality
 - Autofocus
 - Adjust white balance (if necessary)

Camera Basics



- Flash/no flash
- Exposure value (EV)
- Timer
- Camera scene modes



Materials:

- Tripod or camera clamp (with table)
- 2 lamps
- Remote shutter release
- Background material



Source:
<https://archivehistory.jeksite.org/chapters/appendixd.htm> (left); *Digitisation of Heritage Materials*, p. 129, <http://www.dohm.com.au/> (above)

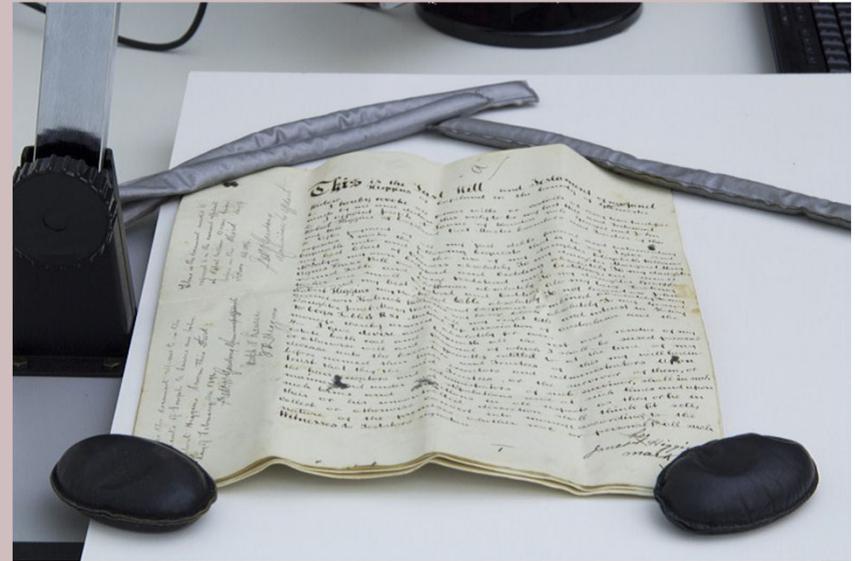
Camera Set-up

Setting Up Bound Albums

- Use a book pillow or book cradle to support albums that cannot open flat
- Use weights, spatulas, or pointers to hold pages down

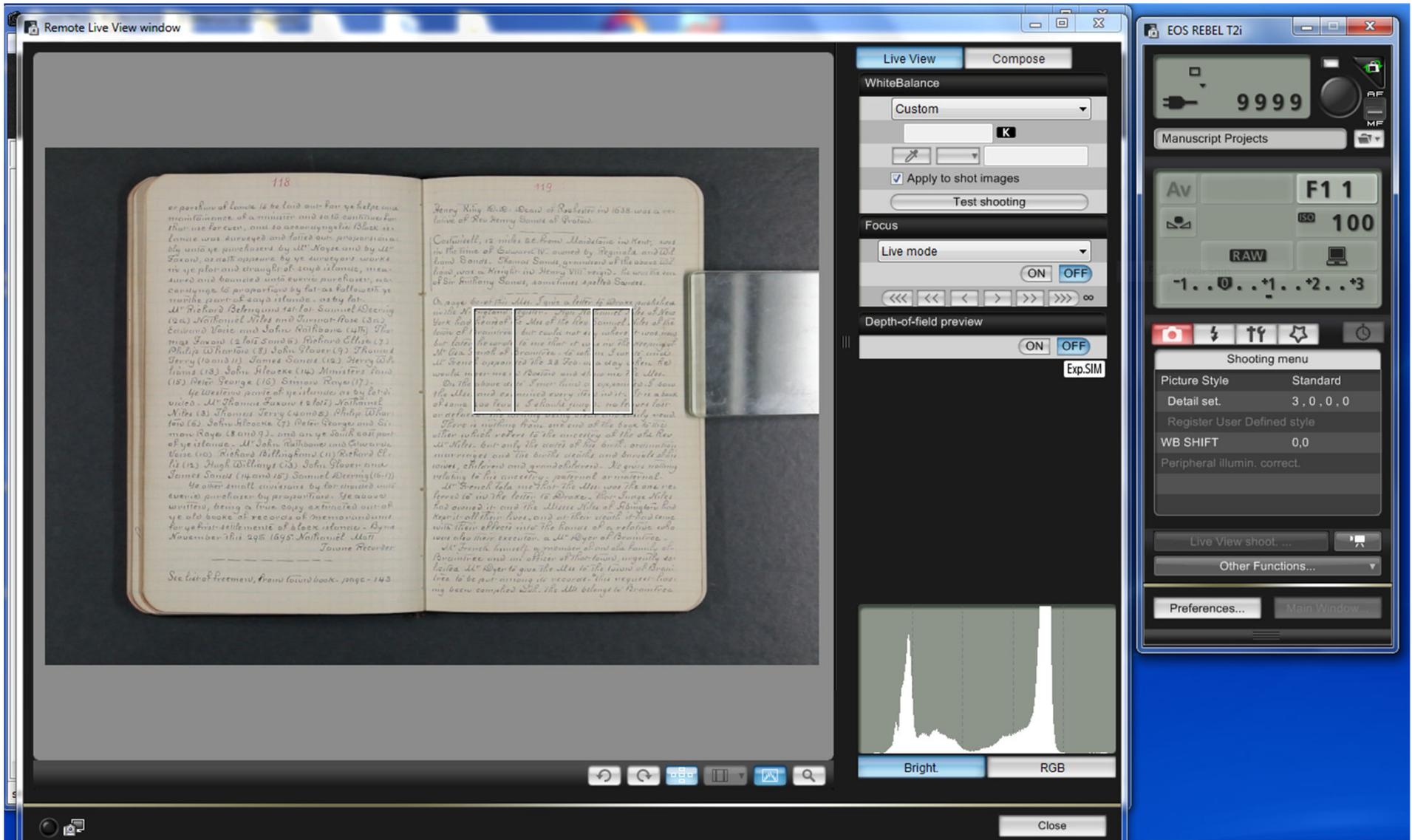
Source:

<https://archivesoutside.records.nsw.gov.au/digitising-your-collection-part-4-scanning-and-handling-tips/>

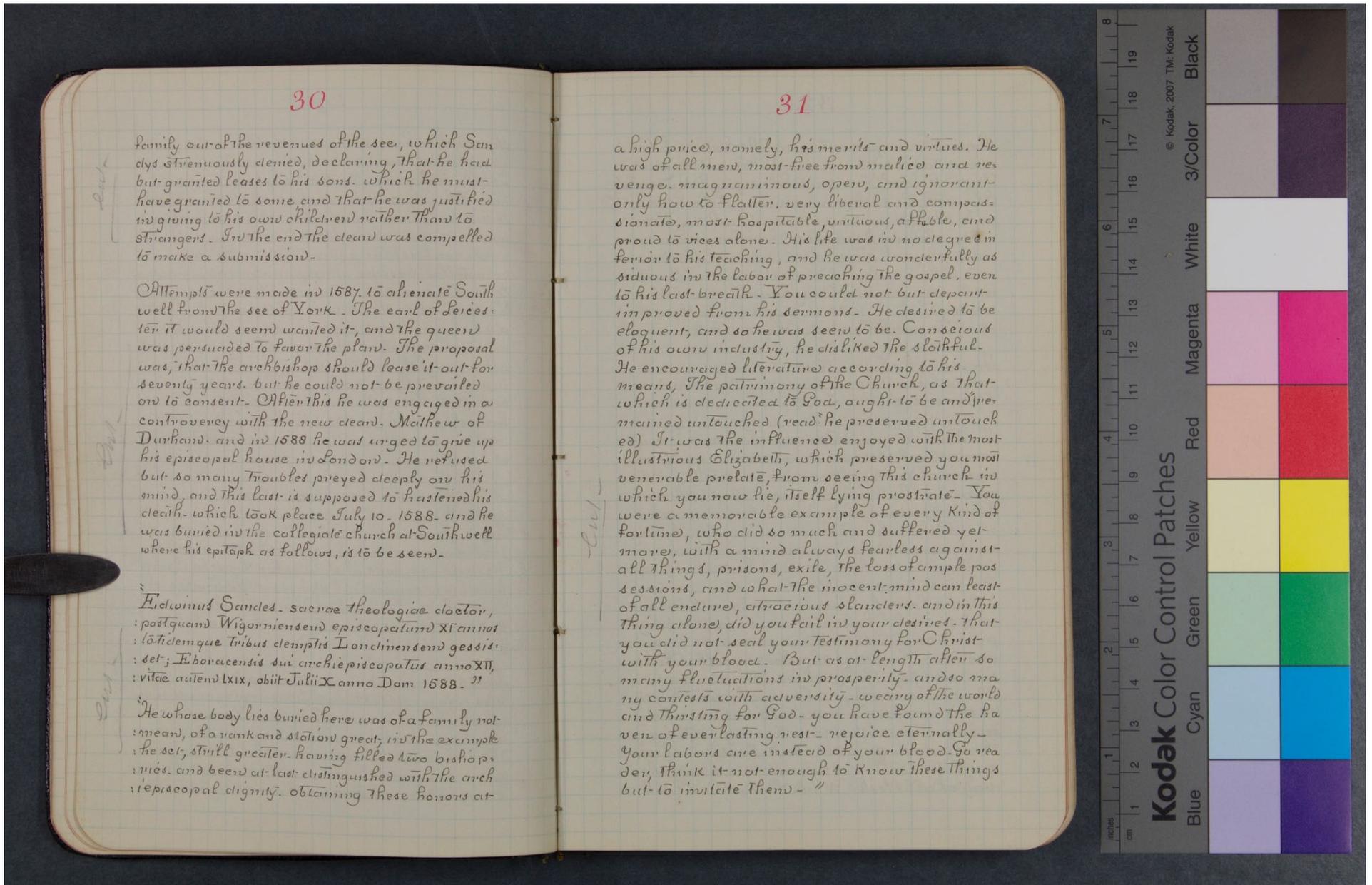




Setting up document and camera



Test exposure and focus



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family out of the revenues of the see, which Sandys strenuously denied, declaring, that he had but granted leases to his sons. which he must have granted to some, and that he was justified in giving to his own children rather than to strangers. In the end the dean was compelled to make a submission.

Attempts were made in 1587. to alienate Southwell from the see of York. The earl of Seiers: ter it would seem wanted it, and the queen was persuaded to favor the plan. The proposal was, that the archbishop should lease it out for seventy years. but he could not be prevailed on to consent. After this he was engaged in a controversy with the new dean. Matthew of Durham. and in 1588 he was urged to give up his episcopal house in London. He refused but so many troubles preyed deeply on his mind, and this last is supposed to hastened his death. which took place July 10. 1588. and he was buried in the collegiate church at Southwell where his epitaph as follows, is to be seen.

Edwinus Sandes. sacrae theologiae doctor, postquam Wigorniensium episcopatum XI annos: totidemque tribus clematis Lonchimensium gessit: set; Eboracensis sui archiepiscopatus anno XII, vitae autem LXIX, obiit Julii Anno Dom 1588.

He whose body lies buried here was of a family not mean, of a rank and station great, in the example he set, still greater. Having filled two bishoprics. and been at last distinguished with the archiepiscopal dignity. obtaining these honors at

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a high price, namely, his merits and virtues. He was of all men, most free from malice, and revenge. magnanimous, open, and ignorant only how to flatter. very liberal and compassionate, most hospitable, virtuous, affable, and proud to vices alone. His life was in no degree inferior to his teaching, and he was wonderfully assiduous in the labor of preaching the gospel, even to his last breath. You could not but be entertained from his sermons. He desired to be eloquent, and so he was seen to be. Conscious of his own inclining, he disliked the slothful. He encouraged literature according to his means, The patrimony of the Church, as that which is dedicated to God, ought to be and remained untouched (read: he preserved untouched) It was the influence enjoyed with the most illustrious Elizabeth, which preserved you most venerable prelate, from seeing this church in which you now lie, itself lying prostrate. You were a memorable example of every kind of fortune, who did so much and suffered yet more, with a mind always fearless against all things, prisons, exile, the loss of ample possessions, and what the innocent mind can least of all endure, atrocious slanders. and in this thing alone, did you fail in your desires. That you did not seal your testimony for Christ with your blood. But as at length after so many fluctuations in prosperity. and so many contests with adversity. weary of the world and thirsting for God. you have found the haven of everlasting rest. rejoice eternally. Your labors are instead of your blood. So reader, think it not enough to know these things but to imitate them.

Sample image

Imaging Cased and Framed Photographs

- Lighting and camera set-up depend on the size and shape of the objects.
- Experiment for the best results.





Source: **Kodak No.1 Circular Snapshots**
<https://flic.kr/p/5eF532>

Editing Images

Considerations

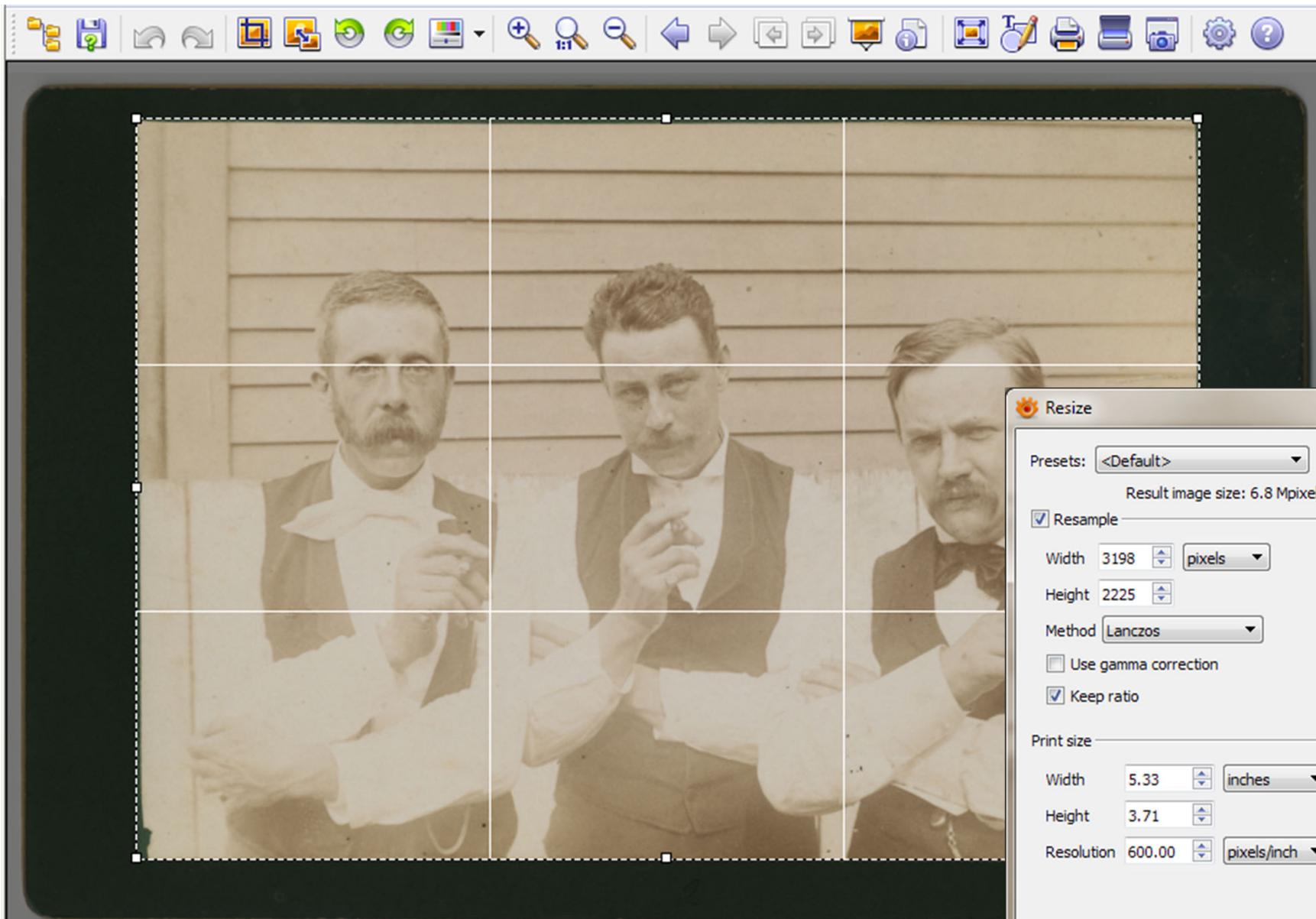
- Size
- Resolution
- Cropping
- Straightening
- Contrast
- Tone, color
- Brightness
- Red eye
- Retouching/repairs
- Text and graphics
- Effects



	Cost	Resizing	Resolution	Adjustments	Red Eye/Repairs	Text & Effects	Comments
Adobe Photoshop	\$\$\$	✓	✓	✓	✓	✓	Best of the best; can be overwhelming
Adobe Photoshop Elements	\$\$	✓	✓	✓	✓	✓	Photoshop for nonprofessionals; bundled with some scanners
Corel PaintShop Pro	\$\$	✓	✓	✓	✓	✓	PC only; functionality of Photoshop at a lower price
ACDSee	\$\$	✓	✓	✓	✓	✓	Lower cost; not as robust as Photoshop or Elements
GIMP (GNU Image Manipulation Program)	free	✓	✓	✓	✓	✓	Open source (PC, Mac, and Linux); interface can be confusing
Paint.NET	free	✓	✓	✓	✓	✓	PC only; more robust than Microsoft Paint

	Cost	Resizing	Resolution	Adjustments	Red Eye/Repairs	Text & Effects	Comments
Apple Photos	free	✓		✓	✓	✓	Mac only; limited options with built-in tools
PhotoScapeX	free	✓	✓	✓	✓	✓	Mac and Windows 10; More robust than Photos
Google Photos	free	✓		✓		✓	More of a photo organizer; limited editing capabilities
Affinity Photo	\$\$	✓	✓	✓	✓	✓	Mac and PC; functionality of Photoshop at a lower price
Skylum Luminar	\$\$	✓	✓	✓	✓		Mac and PC; functionality of Photoshop and Lightroom at a lower price
XnView MP	free	✓	✓	✓		✓	Mac and PC; image organizer with basic editing tools

For reviews, see cnet.com or PCMag.com



Resize

Presets: <Default>

Result image size: 6.8 Mpixels

Resample

Width 3198 pixels

Height 2225

Method Lanczos

Use gamma correction

Keep ratio

Print size

Width 5.33 inches

Height 3.71

Resolution 600.00 pixels/inch

OK Cancel

Cropping with XnView

The screenshot shows the XnView application window. The main area displays a black and white photograph of two men in formal attire (white shirts, dark vests, and bowties) standing in front of a wooden wall. The 'Enhance colors' dialog box is open on the right side of the window. It features a 'Presets' dropdown menu, a 'Preview' checkbox, and two preview windows. The left preview window shows the image with a yellowish tint, while the right preview window shows the original black and white image. Below the preview windows are several sliders and input fields for adjusting image properties:

Property	Value
Brightness	-18
Contrast	33
Gamma	1.00
Temperature	0
Red	0
Green	0
Blue	0
Hue	0
Lightness	0
Saturation	-100

At the bottom of the dialog box are 'OK' and 'Cancel' buttons. The status bar at the bottom of the XnView window shows the file name '11 Mss1109-box06-fol169-01-1_edit.jpg', file size '2.41 MiB', dimensions '3198x2225x24 (1.44)', physical size '5.33x3.71 inches', and zoom level '26%'.

Editing with XnView



"nellie_couch_20241222.jpg"

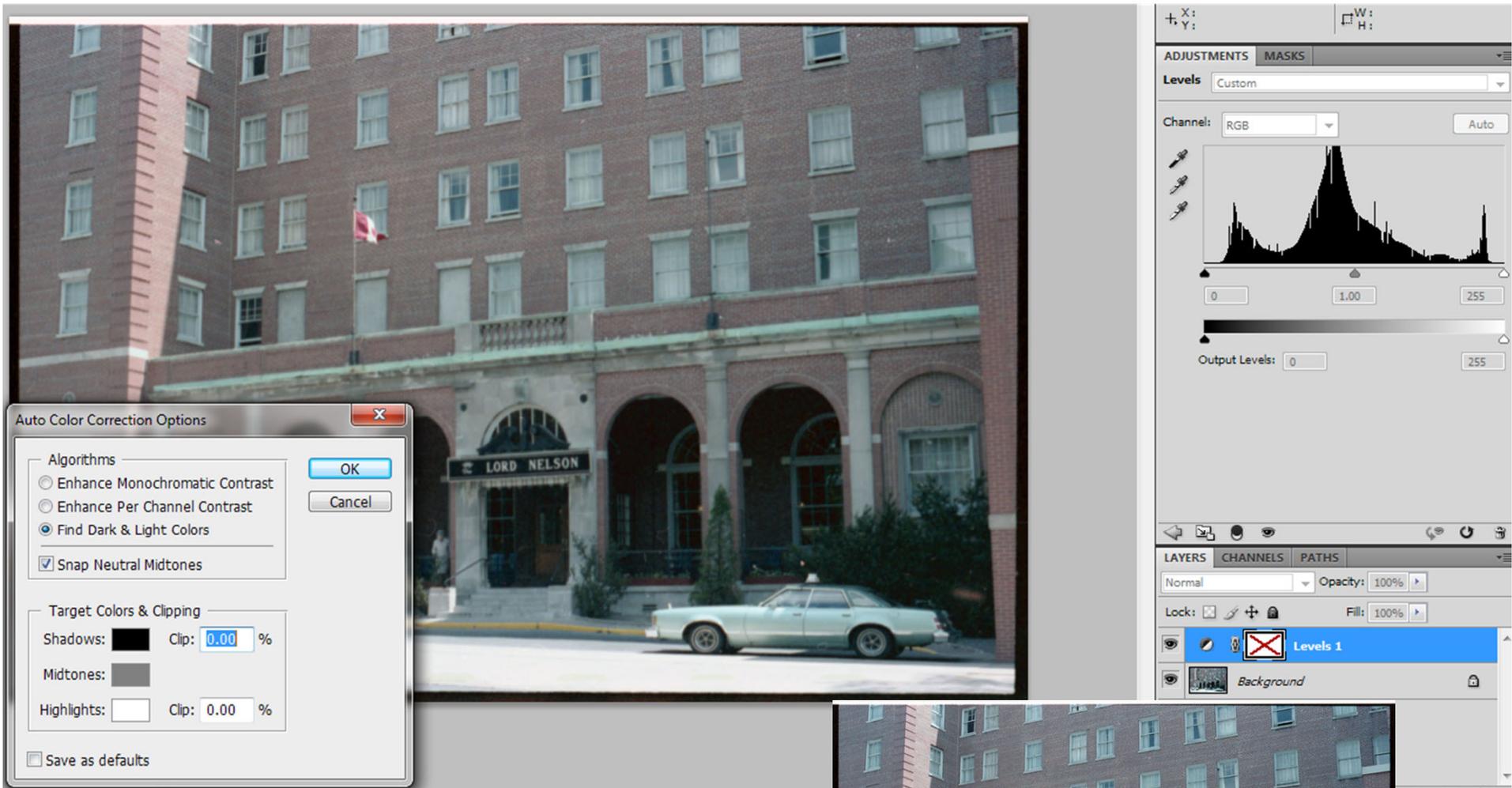


TIP:

When adjusting an image, save it with a different filename



"nellie_couch_auto_enhance_20250129.jpg"



Color correction in Photoshop CS4



Retouching and Repairs

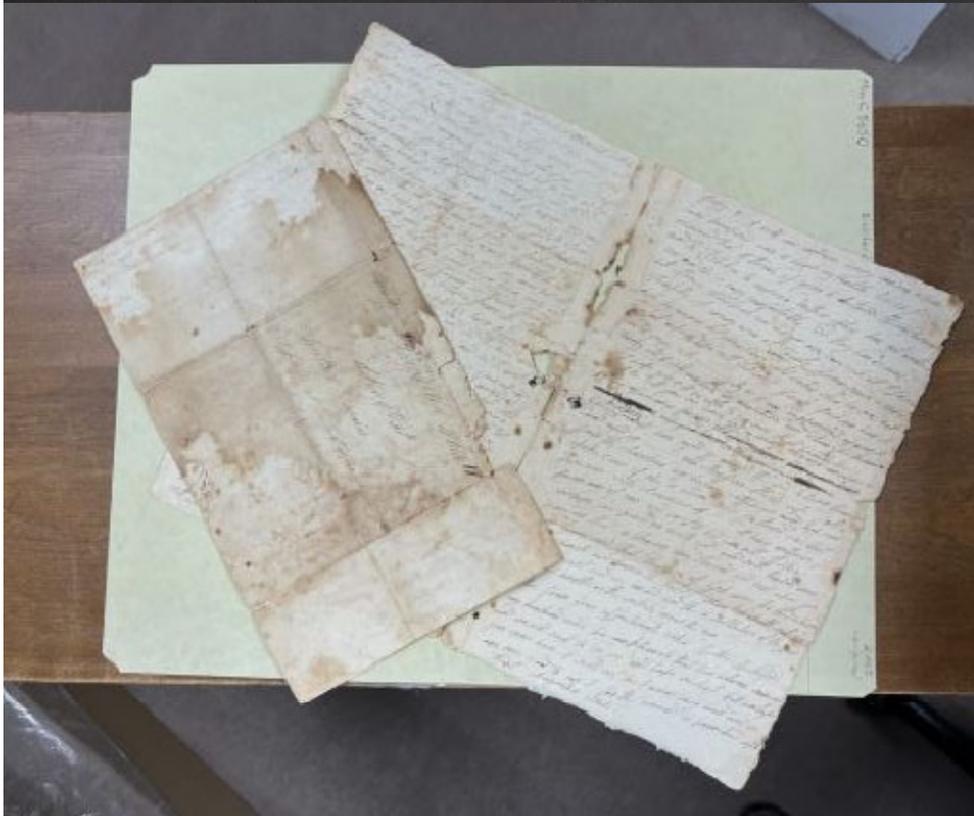


Before



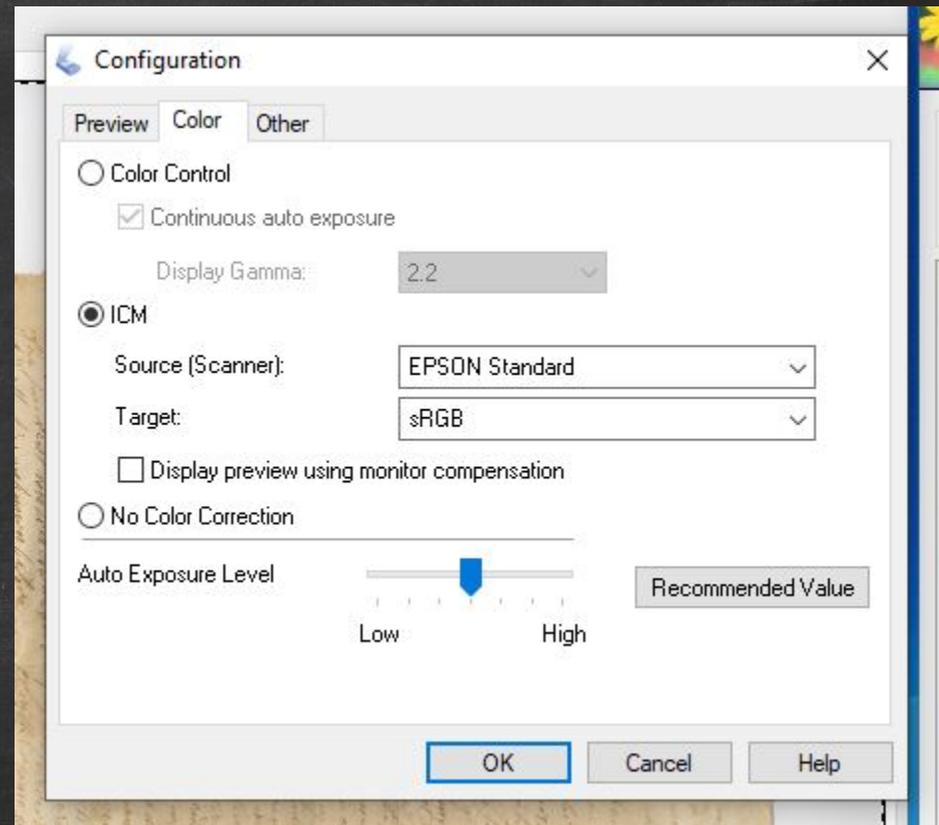
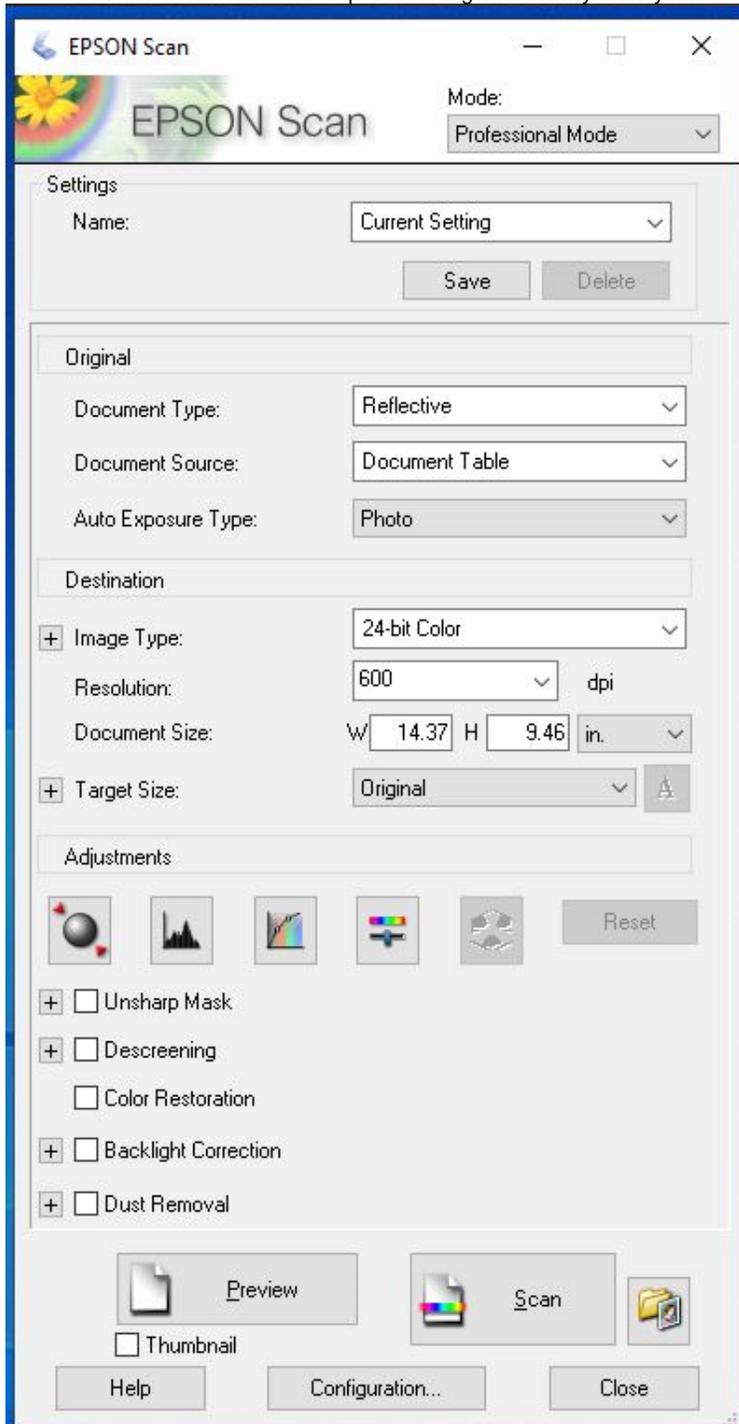
After

QUESTIONS?



Demo





Preview

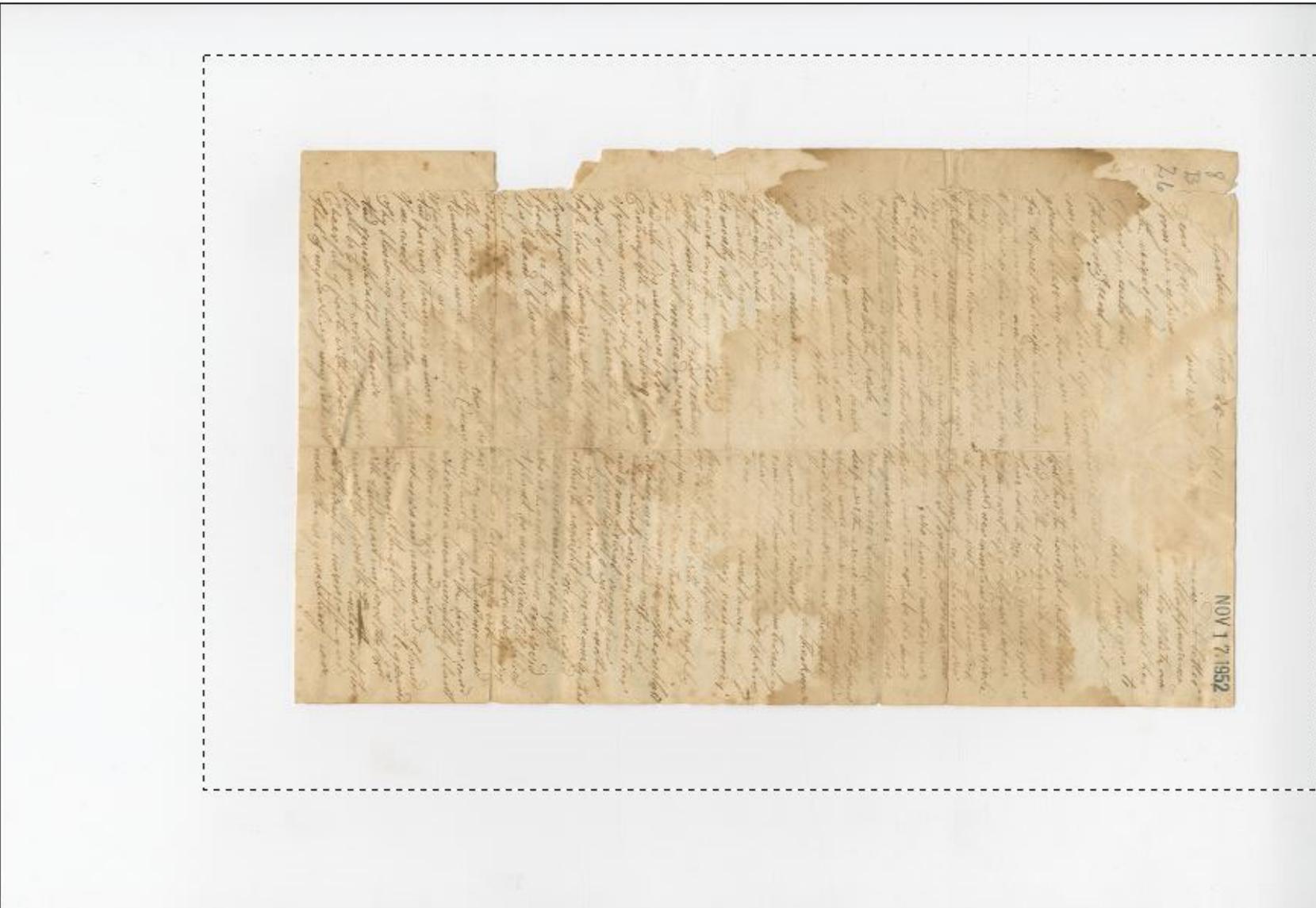
Preview Zoom

Zoom

Marquee

All

Help

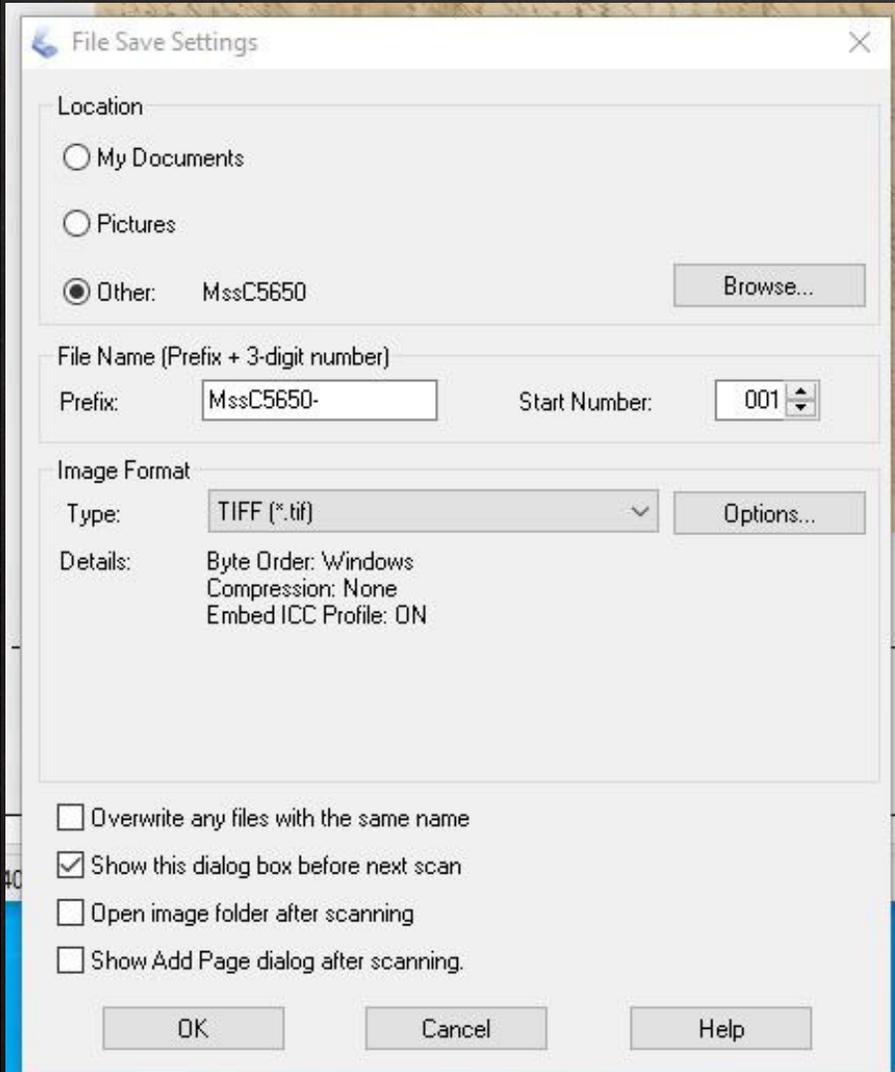


14.37 in. 9.46 in. 8623 x 5677 pixels 140.05 MB R:244 G:243 B:243

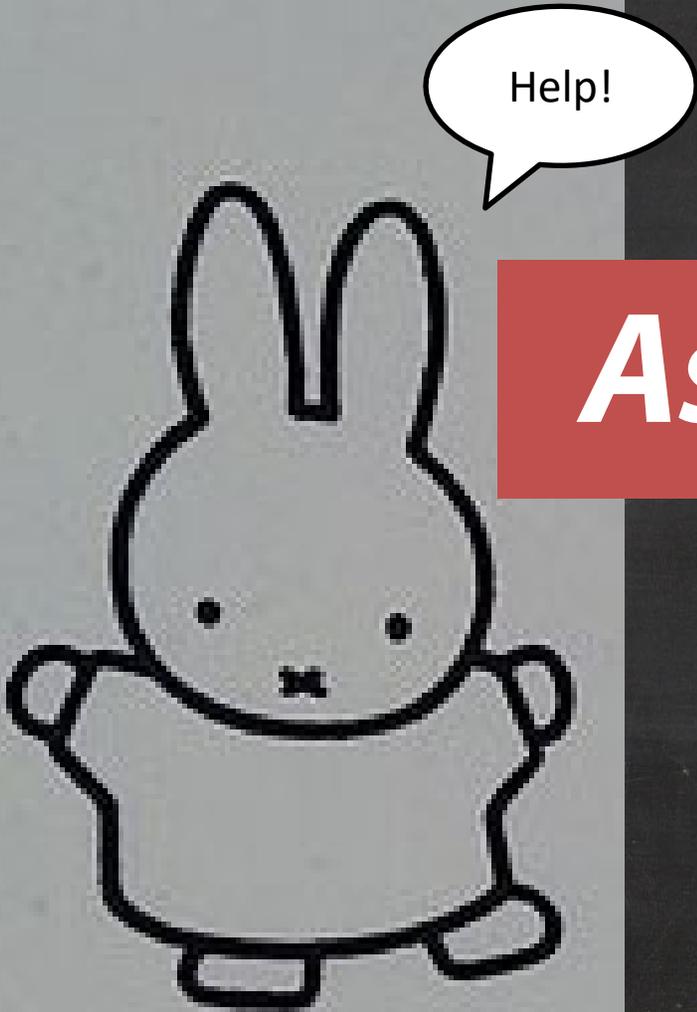
“MssC5660-001.tif”



MssC5660



MssC5660-001.tif
MssC5660-002.tif
MssC5660-003.tif
MssC5660-004.tif
MssC5660-005.tif
MssC5660-006.tif
MssC5660-007.tif
MssC5660-008.tif



Help!

Ask for help!

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QUESTIONS?



THANK YOU!

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