Standard Operating Practices for Stereophotograph Digitization

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Overview.

This protocol defines procedures for digitizing and cataloguing a physical photographic objects for www.photoarchive3d.org

Naming Conventions.

Objects are numbered by physical stamp containing a number and collection identifier ("G.L.Mutter")
Objects are identified in the databases by a sequentially assigned 6-digit number:

ObjNr-XXXXXX

Each digitized image deposited into the photoarchive is identified by a sequentially assigned unique 6-digit negative number in the format:

NegNr-XXXXXX

Generation of a unique object Identifier.

Object IDs are assigned in numerical sequence and tracked in the Red Log, and Object database (Obj_Annotation_XXX.xls). Refer to Red Logbook for next entry.

GLM series begins with ObjNr-000001 GLM Negatives Begin with NegNr-000001
BPF Series begins with ObjNr-200001 BPF Negatives Begin with NegNr-400001
OTH Negatives Begin with NegNr-600001 OTH Object Numbers are assigned by third party

Copystand Photography.

Camera:

Use Canon EOS 5D MarkII set to capture superfine RAW images

Lens:

Images up to 8” max dimension Use 100mm Lens

Canon EF100mm f/2.8L Macro IS USM

Images exceeding 8” max dimension Use 50mm Macro Lens

Canon EF 50mm f/2.5 Compact Macro Autofocus Lens

Microscopic Detail: 0.5" maximum dimension use 65mm lens

Canon MP-E 65mm f/2.8 1-5x

This yields 21 MP DNG images (5616 x 3744 pixels)

As of 2/9/2011, 13,000 images of 5860 physical objects occupy 256GB

Average DNG file size is 20MB (actual is 19.7) per image

100 stereos, front and back average 4 GB of file space

Lights:

Reflected Lights: Use dual 4400K diffused snail lamps set up equidistant R&L of center.

Transmitted Lights:

Glass: Use LED Halv 5700 6” x 8” lightbox masked for correct opening

Hybrid transmitted/Reflected Lighting (Tissues)

Fluorescent PortaTrace Box

9Watt natural snail lamps for reflected light

Camera Accessories:

90’ Angle viewfinder yields 100% field View

Cord exposure release

16GB CF Cards (Transcend Compact Flash Card 16gb 600x)

Standards:

Reflected: Focusing 7”card & Color Standards

Transmitted: Transmitted target with grey x-ray film and kodachrome standard.

ObjNr-NegNr Concordance File: Photoarchive3d_meta_XXX.xlsx

file: Photoarchive3d_meta_245.xlsx
Worksheet: Shoot
File format: Excel xlxs
Thjis file has one unique row for each digital negative and provides shoot date and object number for each digital negative.

Shoot date is actual date of photography as it will appear in Photo Exif
Enter ObjNr in sequence based on logbook
Enter NegNr starting at next negative based on logbook.
Save after advancing one version number

Object Annotation File: Photoarchive3d_meta_XXX.xlsx

File: Obj_Annotation_XXX.xls
Worksheet: Obj
File format: Excel xlxs
This file has one row for each unique object (ObjNr), and does not cross reference negative numbers

Directory Structure for Storage:

Directories:
Systematic_DNG
> GLM_DNG_Vault Starts with Bin20GB_0001
> BPF_DNG_Vault Starts with Bin20GB_1001
Adobe DNG files will be stored in 20GB subfolders designated: “Bin20GB_XXX”
Each bin will hold approximately 900 DNG files

Image File Size:
Each 21 MP DNG image (5616 x 3744 pixels) files will be saved
As of 11/11/2014, 65,803 images of 29,957 physical objects occupy 1,355GB
Average DNG file size is 20.6 MB per image

100 stereos, front and back average 4 GB of file space

Importing Metadata into Lightroom from Excel Database

This is done from an excel exported .csv file (MS-DOS format) using the Lightroom Plug-In LR/Transporter.

Lightroom Transporter: available from
http://www.photographers-toolbox.com

In excel, prepare a comma delimited file with relevant fields.

Label fields as first row of column
Do not use formulas. Copy and save as values if necessary
csv File format:

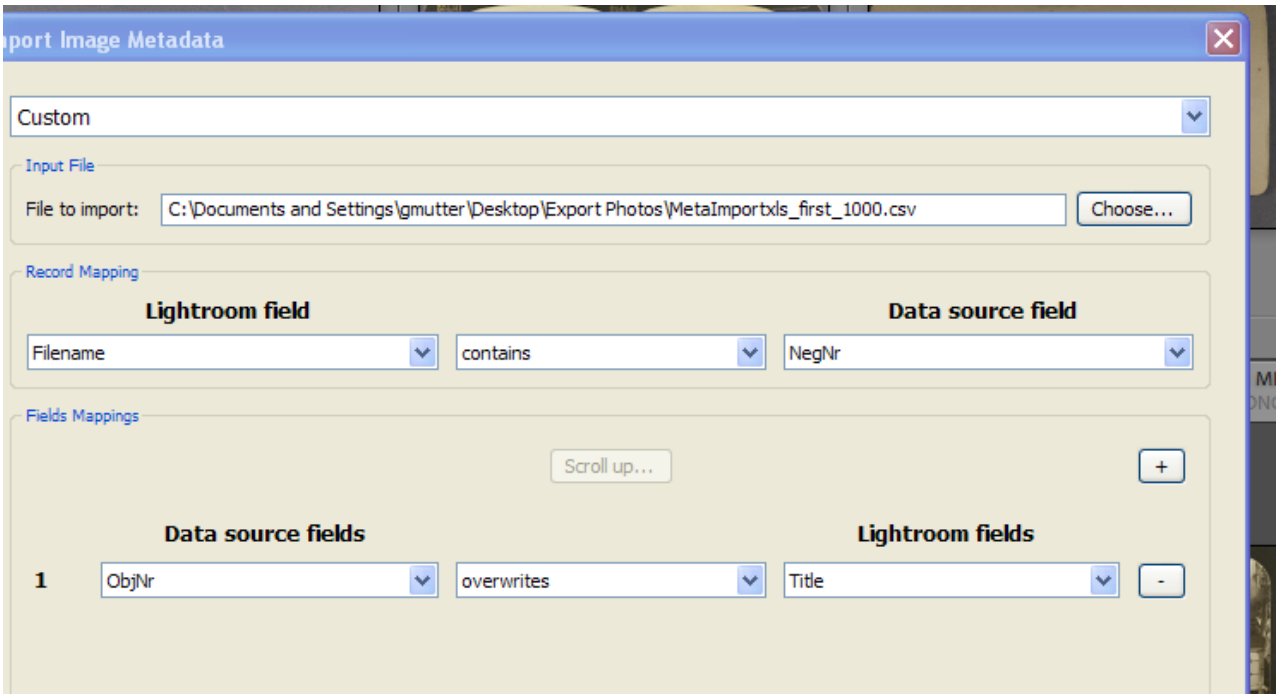
ObjNr	NegNr
ObjNr-007461	NegNr-016061
ObjNr-007462	NegNr-016062
ObjNr-007462	NegNr-016063
ObjNr-007463	NegNr-016064
ObjNr-007463	NegNr-016065

Save using “save as” command and naming the file with a .csv suffix (MS-DOS format). Generally, only 1000 records (file rows) can be imported at one time when matched against all files in the LR database.

Open Lightroom and activate LR/Transporther

Library>PlugIn Extras>Import Metadata using LR/Transporter

This will open a dialog box.
Choose csv file to import



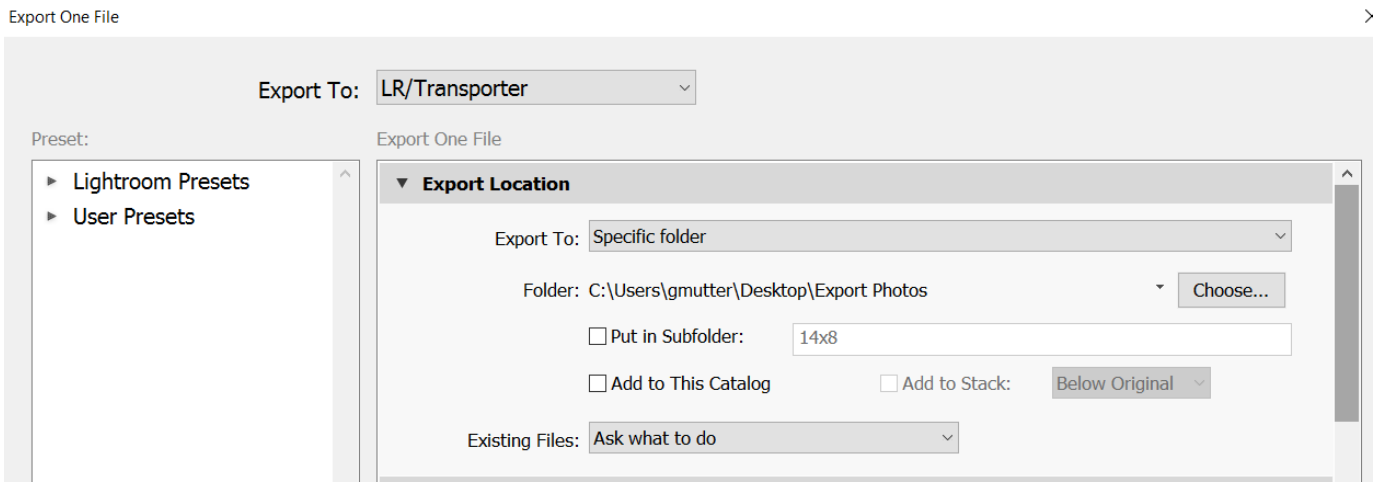
Record Mapping:
Match csv file and LR data elements used to identify unique images
Usually use “contains” options to accommodate different suffixes and prefixes.

Field Mapping:
Select Data source fields to write to Lightroom Field.
example: Data Source “Obj-Nr” overwrites Lightroom “Title”

Next box: Which Images?
Select “All”

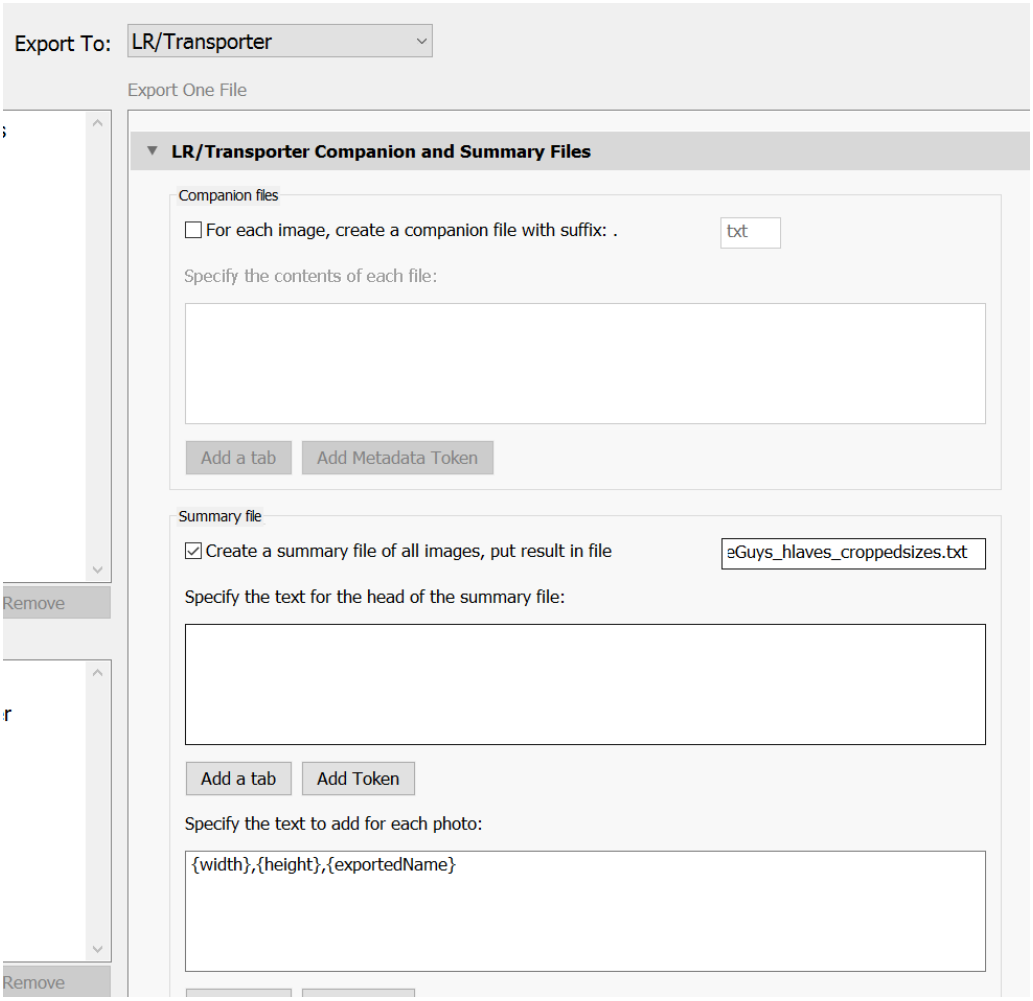
Exporting Image Metadata Using LR Transporter

1. In Lightroom Library, Select Images to be exported in Lightroom. This can be after various filters are applied.
2. In Left Panel, Select “Export”
3. choose LR/Transporter from the top of the export dialog



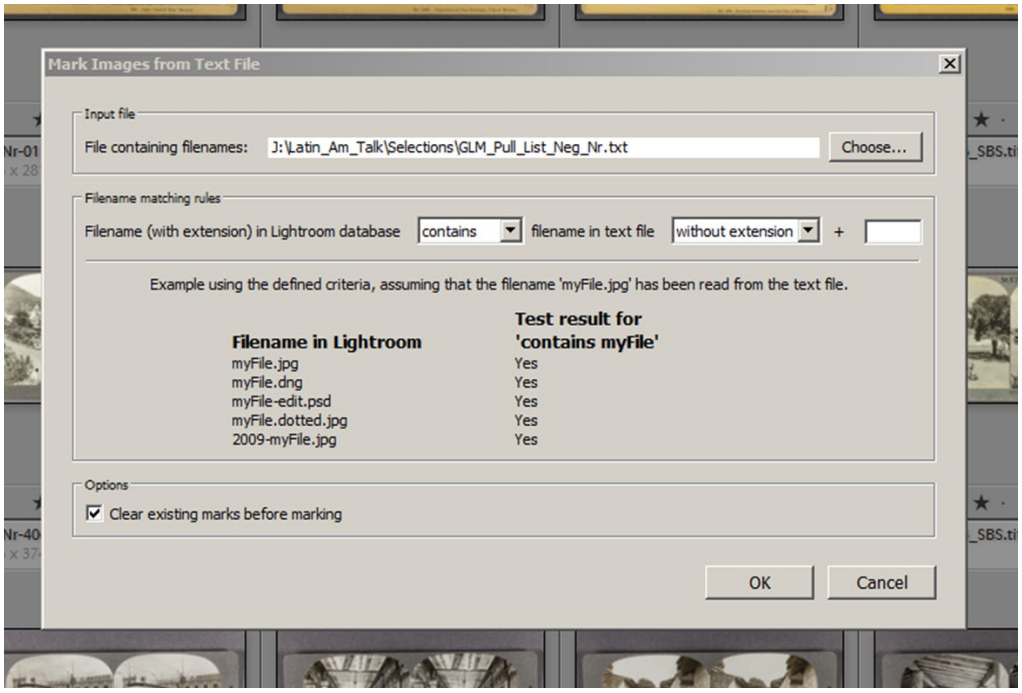
4. Set Up Export to include metadata only

   Check Create Summary File and Add Components (Tokens) wanted, separating by "," or "tab". e.g. {width},{height},{exportedName}
   Be sure to add a return at end of single line for one photo



5. Be Sure to select "Delete exported files after transfer" to delete copied images

Pulling Pics from a file list: using LR Transporter



1. Create an ms-dos text file (txt) in which each line contains one file name. Not necessary to add suffix filetype.
2. file “NegNr-015436.dng” is entered in txt file as “NegNr-015436”
3. Open Lightroom Transporter Module:
    a. Library>
        i. PlugIn Extras
        ii. >Mark Images using LR/Transporter
4. Adjust settings:
    a. txt file location
    b. database “contains”
    c. in text file “without extension”
    d. “Clear existiong marks”
5. Press “OK” and wait. It is pretty fast, and can handle up to about 1000 file requests at a time.
6. View selected files by using Attribute filter

WEB PRODUCTION

Image Resizing

Maximum dimension for web display is 600pixels (6.25inches at 96dpi)
Best Thumb size is 200 pixels

Inserting Frontpage Gallery into Dreamweaver**:**

Re: How can I place a Lightroom 3 image gallery in a Dreamweaver page?

You'll need to work in CodeView.

Copy the relevant code from your image gallery page into your site page. Adjust paths to images & scripts as necessary.

Another simpler approach, insert an iframe into your site page. Point the iframe **src** to your gallery.html page. Adjust iframe **height** and **width** to accommodate the size of your gallery page.

http://w3schools.com/html/html_iframe.asp

Nancy O.
Alt-Web Design & Publishing
Web | Graphics | Print | Media Specialists
http://alt-web.com/
http://twitter.com/altweb

Syntax for adding an iframe:
<iframe src="*URL*"></iframe>
The URL points to the location of the separate page.

Iframe - Set Height and Width
The height and width attributes are used to specify the height and width of the iframe.
The attribute values are specified in pixels by default, but they can also be in percent (like "80%").
Example
<iframe src="demo_iframe.htm" width="200" height="200"></iframe>

<iframe src=file:////KMT19_Databox/media/My%20Webs/Photoarchive3D/Galleries/Gallery_01_Test/index.html width=1000 height=2000></iframe>

FOCUS STACK VIA LIGHTROOM

focus stacking portrays deep objects in focus on various focal planes in one sharp image where everything is in focus, essentially mimicking a greater depth of field without any loss of definition.

How to focus stack in Photoshop Lightroom.
Following the steps below to achieve a beautiful composite photo with seamless tones.

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1. Plan ahead for compositing. “I engineer my shoot knowing that I’m going to be compositing in post,” Clemetson says. Shoot a series of images from the same angle, and use manual focus on different areas as you go.

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2. Select your photos in Lightroom. Load files you plan to stack into Lightroom. In the Grid view or the Filmstrip in the Library module, select the ones you want to stack. (They must be located in the same folder or the same collection.)

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3. Choose Photo > Edit in > Open as Layers in Photoshop. The stacked photos will display an order number in the upper left corner of their thumbnails, with the top layer being photo 1 and so on.

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4. Select the layers in the Layers panel. Choose Edit > Auto-Align Layers. Be sure to have Auto selected in the Auto-Align Layers dialog before pressing OK.

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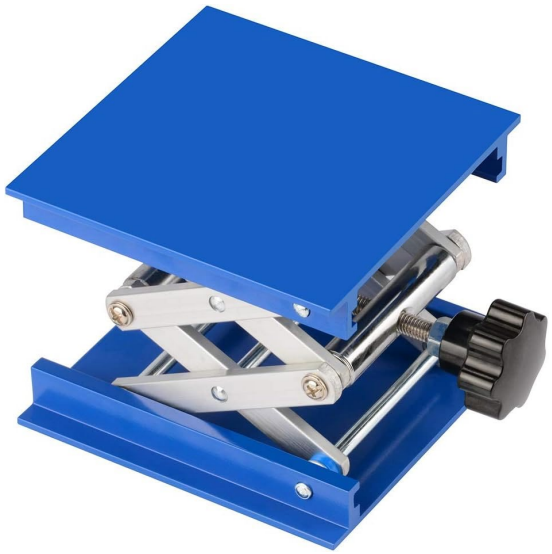
5. Select all the layers in the group. Choose Edit > Auto-Blend Layers. In the dialog, select Stack Images and click OK. Now you have your focus-stacked image shown as a layer mask.

Tricks in Using Elevated Platform for depth Focus

1. Use backlit sheet if shadow removal of vignetted object desired. Blue does not work!
2. Start with lens zoom at approximate desired object size
3. Move platform to approximate focus, touching up zoom size with lens ring.
4. Leaving lense zoom fixed, turn platform knob to adjust focus as needed.
5. Shoot color standard for adjustment



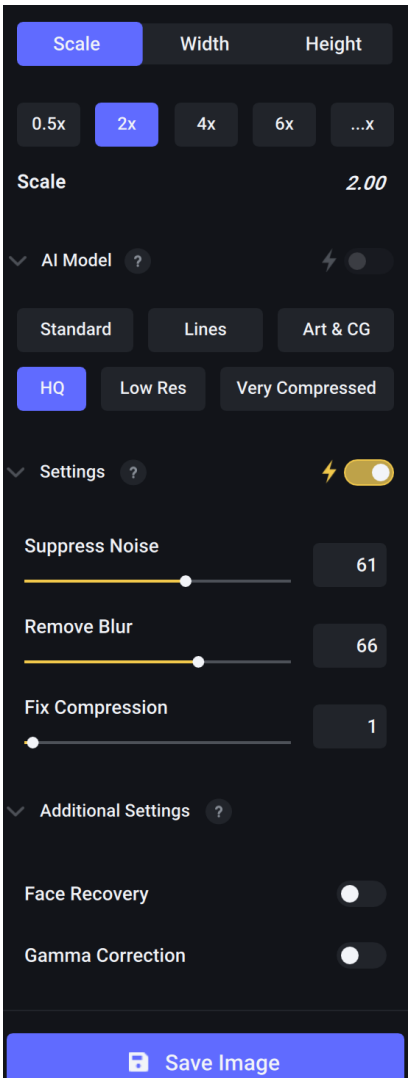
FILE UPSCALING WITH TOPAZ GIGAPIXEL AI

https://www.topazlabs.com/

This allows upscaling of image halves and originals (always pre-anaglyph or alignment overlays) with coincident Sharpening, noise reduction, and restoration of detail.
Preferred to photoshop resizing.
Open Gigapixel AI and import images to be processed. These can be batched.

Scaling Gigapixel AI Enlargements: for 16:9 4K projection at 3840x2160px

Generally 2x is sufficient at 21MP capture of most stereocards.

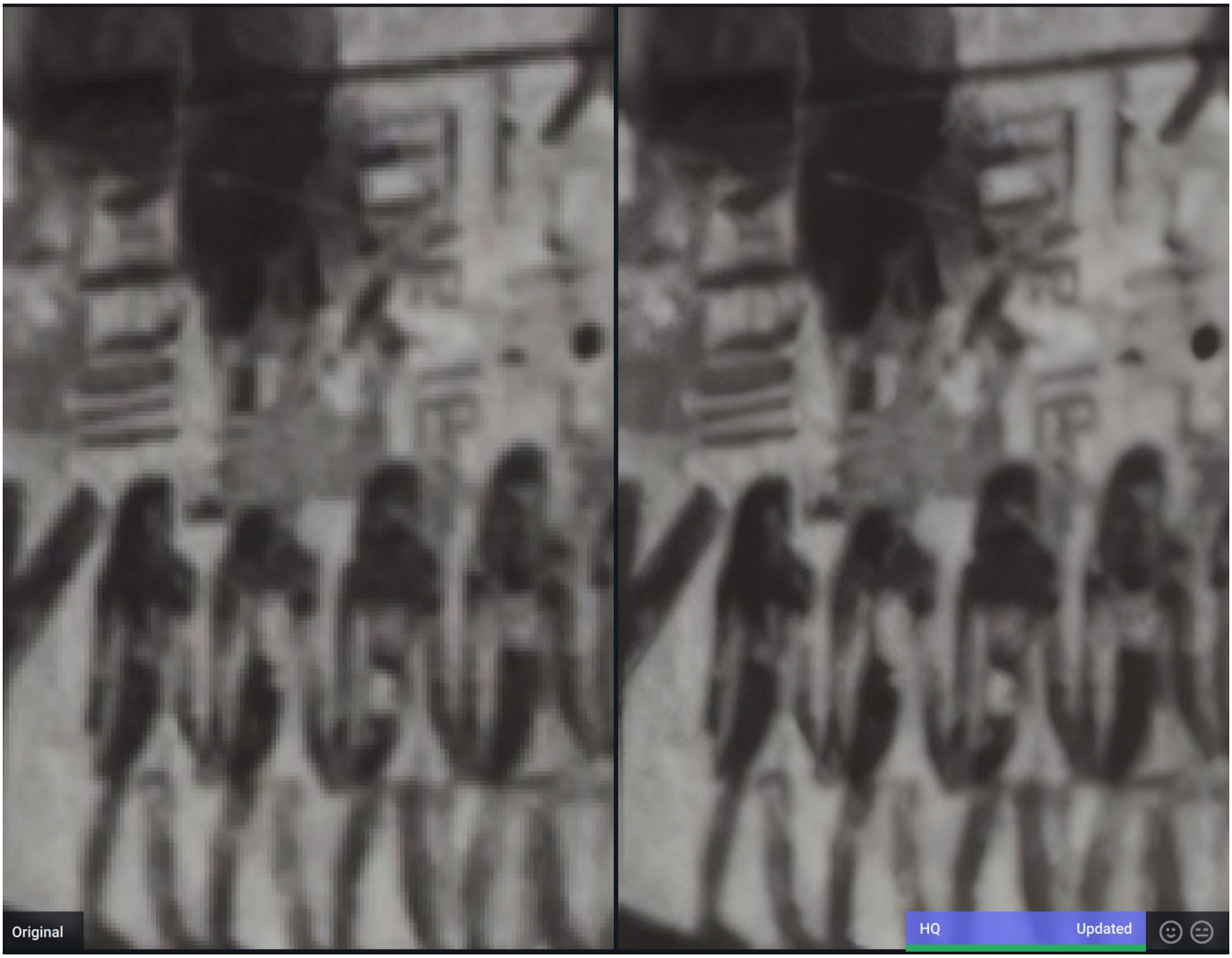


Gigapixel AI Model: can be adapted to material at hand.
[Examples]

1. **Gigapixel AI Model of Choice: "HQ" Model** enlarges picture without introducing "AI-evident" distortion. Some pics may benefit from sharpening in advance, but this should be done image by image to assess effects of sharpening artifact.
    a. Best if source image already processed in Lightroom for contrast
    b. Will not introduce textural artifacts.
    c. Works with ALL files, may not be ideal for some that require enhancement.
    d. Color Bleed and Face Refinement "OFF" because it causes distortion.
2. "low resolution model" increases resolution while introducing some artifictual wispy polygonal effects.
    a. A second choice.
    b. Usually best, especially if the image is sharpened in advance.
    c. Gives gentle softening of enlarged detail that can improve resolution and increase image size.
3. "Standard" yields some unpredictable textures that increase distortion of film grains.
    a. Assess this at 200% viewing resolution with pre-post split screen.
    b. Is optimized for overall visual impression when viewing the entire image.
    c. Can work very well with pre-sharpened images.

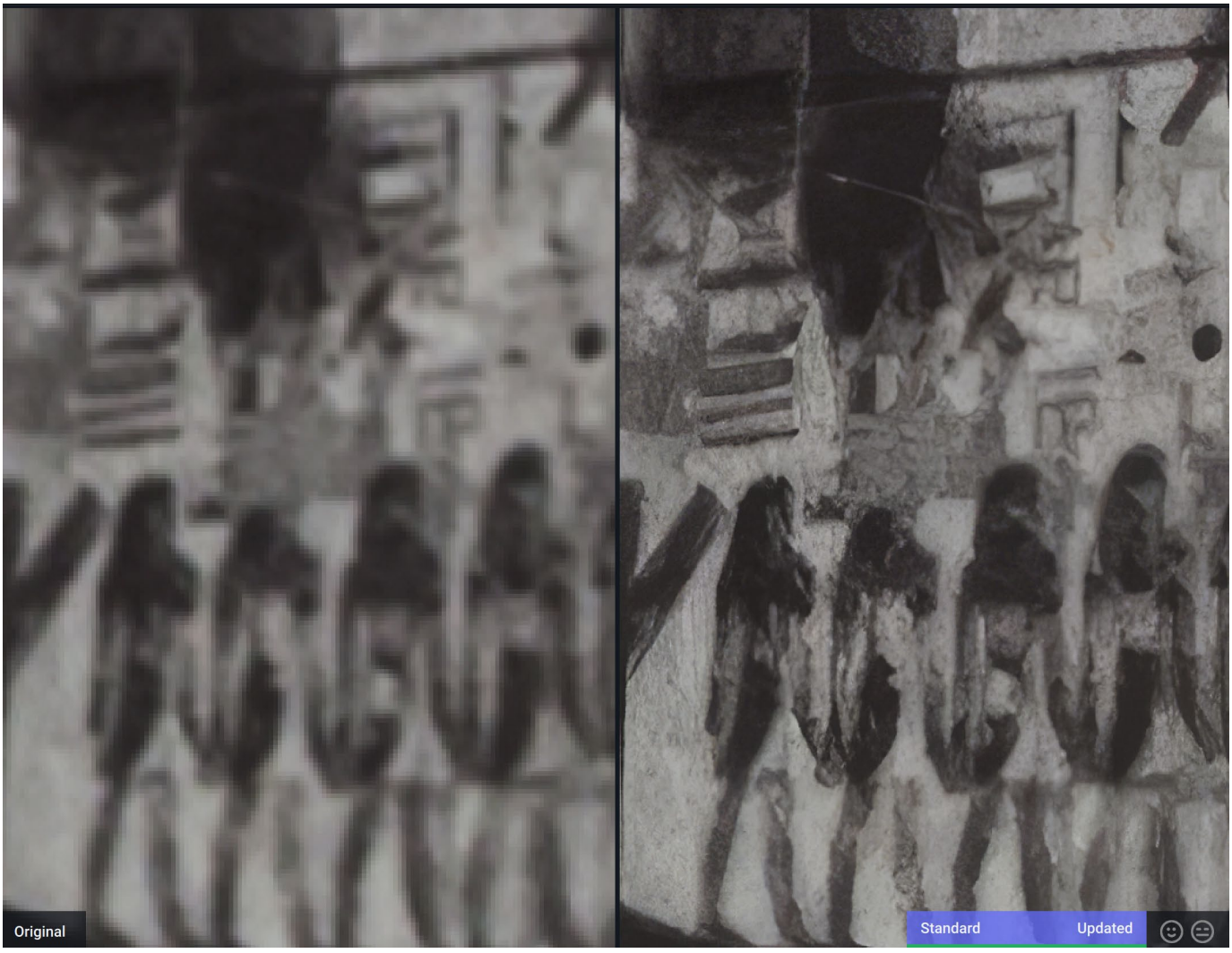
Gigapixel Ai 4x Enlargement: Effect Of Pre-Sharpening On Gigapixel of Various Resolution Models. Egyptian tomb wall

Lightroom > Gigapixel AI: "HQ AI Setting" at 4x enlargement.
Lightroom TIFF > Gigapixel AI
Primary file exported from lightroom.



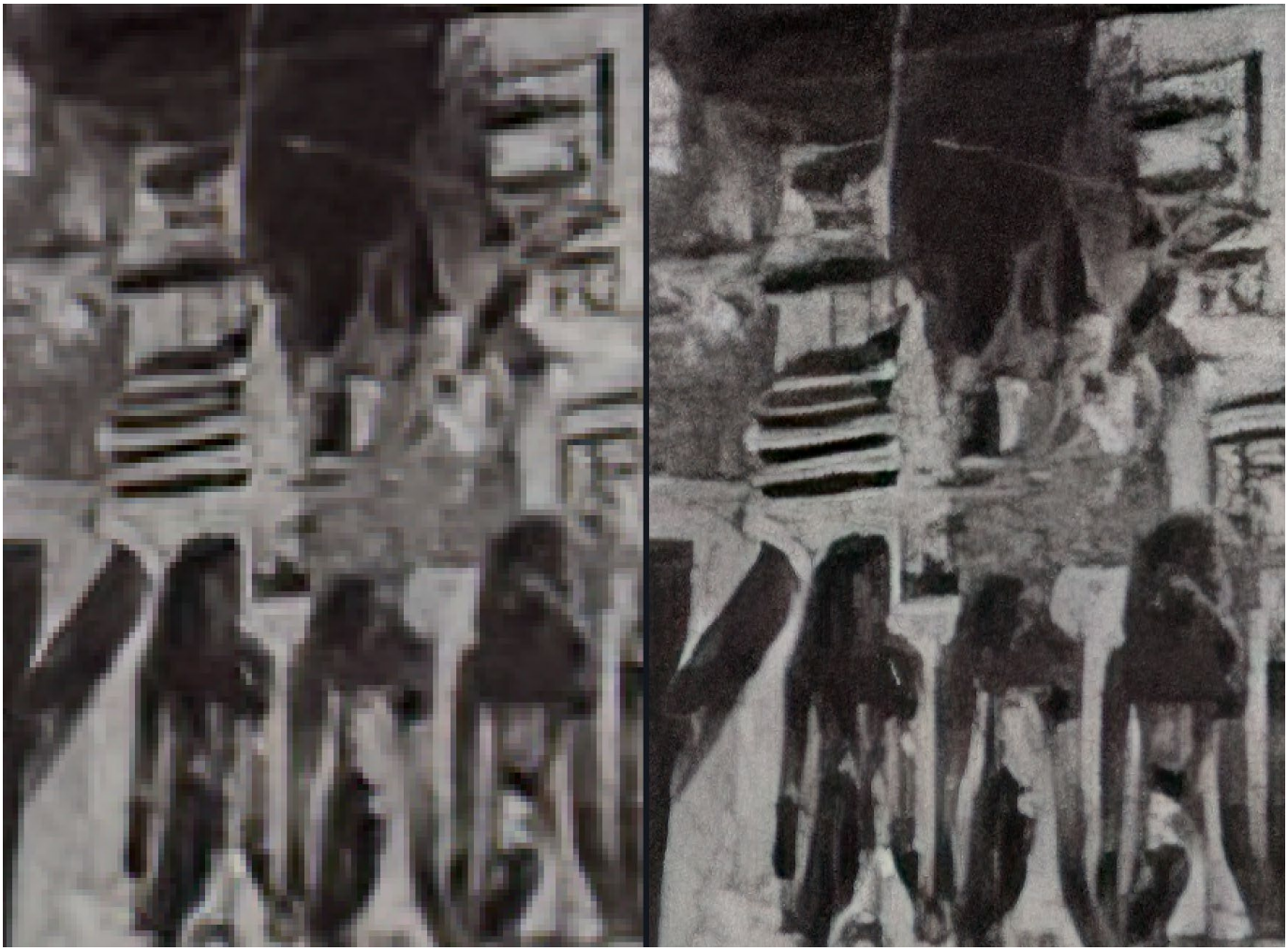
Detail in upper right still fuzzy, but pixeless and undirtorted by wisps or polygons

Lightroom > Gigapixel AI: “Standard GP AI Setting” at 4x enlargement.
Lightroom TIFF > Gigapixel AI
Primary file exported from lightroom.
Polygonal boundry distortion is cost of detail enhancement
Sharp resolution of contrast, but with distortion of polygonal color fields that look like a mosaic



Lightroom > Gigapixel AI: “Low Resolution GP AI Setting” at 4x enlargement.
Lightroom TIFF > Gigapixel AI
Primary file exported from lightroom.
Detail in upper right now sharp, but some polygon enhancement

Sharpen AI > Gigapixel AI: “Low Resolution GP AI Setting” at 4x enlargement.
Gigapexel Sharpen AI pre-processed before applying Gigapixel AI.
Very good edge enhancement with with soft with grain effect



Another Example of Gigapixel AI on Russian storefronts

BEST: Lightroom > Gigapixel AI: "HQ AI Setting" at 4x enlargement.
Lightroom TIFF > Gigapixel AI
Primary file exported from lightroom.

FAIR: Lightroom > Gigapixel AI: "Standard GP AI Setting" at 4x enlargement.
Lightroom TIFF > Gigapixel AI
Primary file exported from lightroom.

GOOD: Lightroom> Gigapixel AI 4x: LOW RESOLUTION setting. Some evident artifact

GOOD-BETTER: Lightroom> Sharpen AI >Gigapixel AI 4x: LOW RESOLUTION setting. Pre-sharpening helps details in the face.

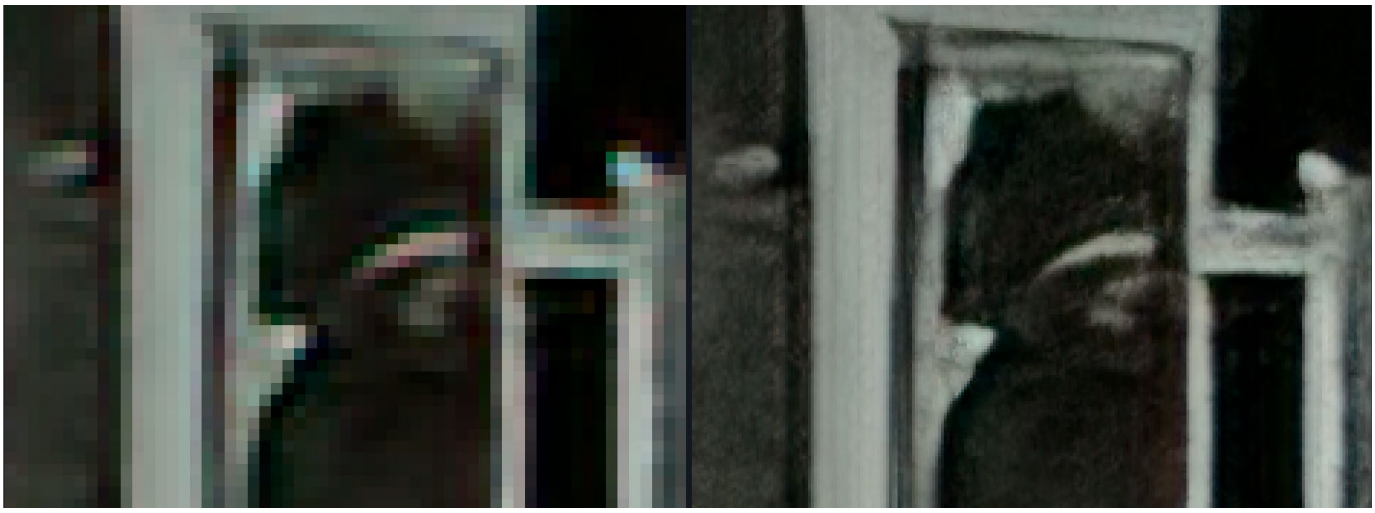


Photo Types and Abbreviations.

Abrev	Type	
S	stereo	standard 3 ½” by 7” view
R	size	Raumbild size; 6x13 cm
O	size	Oversized, generally cabinet
L	format	Lantern Slide (3.5 x 4.0 inches)
CDV,V	size	Carte de Visite
F	format	flat mount
C	format	Curved mount
G	format	Glass -fullsize
	format	Tinted
A	format	Autochrome
	format	Salt Print
	format	Litho or photomechanical
	format	Cabinet Card
PA	format	Photo album snaps
	format	Large Format
T	format	Tissue
M	format	mono
tin	format	tintype
e	format	ephemera-paper
dag	format	daguerreotype
B	series	Set (usually boxed)

Adobe Lightroom Version

Lightroom version	Installed	Camera Raw Version	Comments
2.0	09/29/2008		
2.1	10/23/2008		
2.2	12/23/2008		
2.3	03/12/2009		
2.4	06/24/2009		
2.5	09/15/2009		
2.6	03/03/2010		
2.7	04/23/2010		
3.0	06/10/2010		
3.2	08/31/2010		
3.3	12/07/2010	6.3	
3.4.1	5/24/2011		
4.1	8/1/2012	7.1	Requires win 7
5.0	5/25/2013	8.1	Requires win 7
5.2	09/22/2013	8.2	
5.3	02/02.2014	8.3	
5.5	06/20/2014	8.5.0	64 bit
5.6	8/12/2014	8.6	64 bit
5.7	11/25/2014	8.7	64 bit
13.5	09/02/2024	16.5	64bit, Classic

Eos 5D MarkII Settings, by Photo Type

Setting	Paper Cards Reflected	Glass-Trans illuminated	Tissues-Trans illuminated	Albums Reflected
Dial Setting	C1	C2	C3	C1
f-stop priority	F16	F13	F13	F16
ISO	400	400	200	400
lights	daylight snail	LED box	flur box+ 9w snail	daylight snail
light temp	4400	4400		4400
Standards	focus target, color palette	focus target, x-ray film gray	focus target, x-ray film gray	focus target, x-ray film gray
Focus	manual	manual	manual	auto on, evaluative
metering	auto (average)	center weighted manual	center weighted manual	auto (average)
Exposure Bias	0	0	0, -2/3, -1 1/3	0
white balance set	4400	4400	4400	4400
File Format	RAW, superfine	RAW, superfine	RAW, superfine	RAW, superfine
Resolution	21MP, 5616x3744	21MP, 5616x3744	21MP, 5616x3744	21MP, 5616x3744

Lightroom Import Settings, by Object Type: New Process (2012)

LR Setting	Paper Cards Reflected	Glass-Trans illuminated	Tissues-Trans illuminated	Autochromes
Auto Tone	OFF	OFF	OFF	OFF
White Balance	Temp 4400 Tint +5	Temp 4200 Tint +2	Temp 4200 Tint +2	Temp 4200 Tint +2
Copyright	from template	from template	from template	from template
Lens Correction	Apply	Apply	Apply	Apply
Tone	Exposure +0.36 Contrast +14 Highlights -36 Shadows +36 Whites 0 Blacks -14	Exposure +0.71 Contrast +7 Highlights -43 Shadows +43 Whites +21 Blacks -7	Exposure +0.36 Contrast +0 Highlights -36 Shadows +36 Whites 0 Blacks -14	Exposure 0 Contrast +21 Highlights 0 Shadows 0 Whites 0 Blacks -29
Presence	Clarity +36 Vibrance +14 Saturation 0	Clarity +36 Vibrance 0 Saturation 0	Clarity +50 Vibrance +14 Saturation 0	Clarity +36 Vibrance +0 Saturation 0
Sharpening	amount 25 radius 1.0 detail 25 masking 0	amount 25 radius 1.0 detail 25 masking 0	amount 25 radius 1.0 detail 25 masking 0	amount 25 radius 1.0 detail 25 masking 0
Noise Reduction	Luminance 25 Detail 50 Contrast 0 Color 25 Detail 50	Luminance 10 Detail 50 Contrast 0 Color 25 Detail 50	Luminance 30 Detail 50 Contrast 0 Color 25 Detail 50	Luminance 0 Detail 50 Contrast 0 Color 25 Detail 50
Profile Correction Basic	Enable Profile Corr (automatic) Remove Chromic Aberr	Enable Profile Corr (automatic) Remove Chromic Aberr	Enable Profile Corr (automatic) Remove Chromic Aberr	Enable Profile Corr (automatic) Remove Chromic Aberr
Format	DNG convert	DNG convert	DNG convert	DNG convert
Rename	NegNr-0XXXXX	NegNr-0XXXXX	NegNr-0XXXXX	NegNr-0XXXXX

Noise Reduction (Luminance): Extent varies with type of image
- Paper views 25
- Grainy paper 45
- Glass 0-25

Metadata Mapping

LR Seq	Category	IPTC Field	Annot xls	Value	
1	LR Core	Copy Name			
2	LR Core	Rating			
3	LR Core	Label			
4	LR Core	Caption			
5	IPTC Core	Headline			
6	IPTC Core	Subject Code			
7	IPTC Core	Desc Writer			
8	IPTC Core	Category			
9	IPTC Core	Other Category			
10	IPTC Image	Date Created			
11	IPTC Image	Intellectual Genre			
12	IPTC Image	IPTC Scene Code			
13	IPTC Image	Sublocation			
14	IPTC Image	City			
15	IPTC Image	State/Province			
16	IPTC Image	Country			
17	IPTC Image	ISO Country Code			
18	IPTC Workflow	Title	ObjNr		
19	IPTC Workflow	Job Identifier			
20	IPTC Workflow	Instructions			
21	IPTC Workflow	Creditline			
22	IPTC Workflow	Source			
23	IPTC Copyright	Status			
24	IPTC Copyright	Copyright			
25	IPTC Copyright	Rights usageterms			
26	IPTC Copyright	Copyright URL			
27	IPTC Extended	Person Shown			
28	IPTC Ex Location Created	Sublocation			
29	IPTC Ex Location Created	City			
30	IPTC Ex Location Created	State/Province			
31	IPTC Ex Location Created	Country			
32	IPTC Ex Location	Country Code			

LR Seq	Category	IPTC Field	Annot xls	Value	
	Created				
33	IPTC Ex Location Created	World Region			
34	IPTC Ex Location Shown	Name of Organization			
35	IPTC Ex Location Shown	Code of Organization			
36	IPTC Ex Location Shown	Event			

Digital Projection:

Color Balance

Always use sRGB for jpgs to be projected directly
If in PPT, ok to use sRGB or adobe RGB

Anaglyphs:

Will ghost if compressed. Always size and crop full sized TIFF when possible and convert to optimized anaglyph (red/cyan) JPG as the very last step.

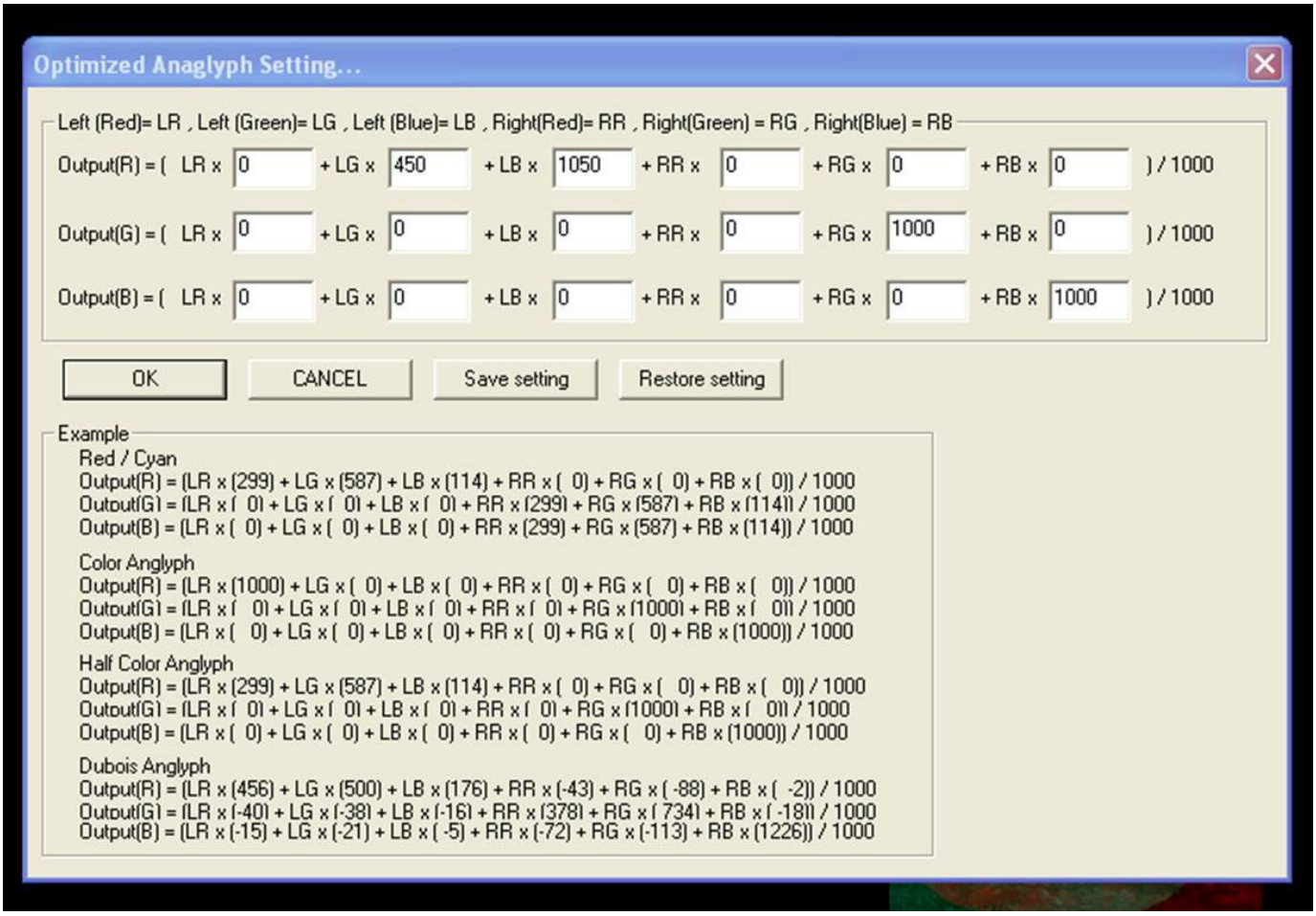
Software for Anaglyph manipulation:

Stereophotomaker is the best software for this purpose and it is freeware available at: Download and see instructions at

http://stereo.jpn.org/eng/stphmkr/

Optimized Anaglyph Mode

Output[R] =(Left[R]x0 + Left[G]x450 + Left[B]x1050+ Right[R]x0 + Right[G]x0 + Right[B]x0) / 1000
Output[G] =(Left[R]x0 + Left[G]x0 + Left[B]x0 + Right[R]x0 + Right[G]x1000 + Right[B]x0) / 1000
Output[B] =(Left[R]x0 + Left[G]x0 + Left[B]x0 + Right[R]x0 + Right[G]x0 + Right[B]x1000) / 1000



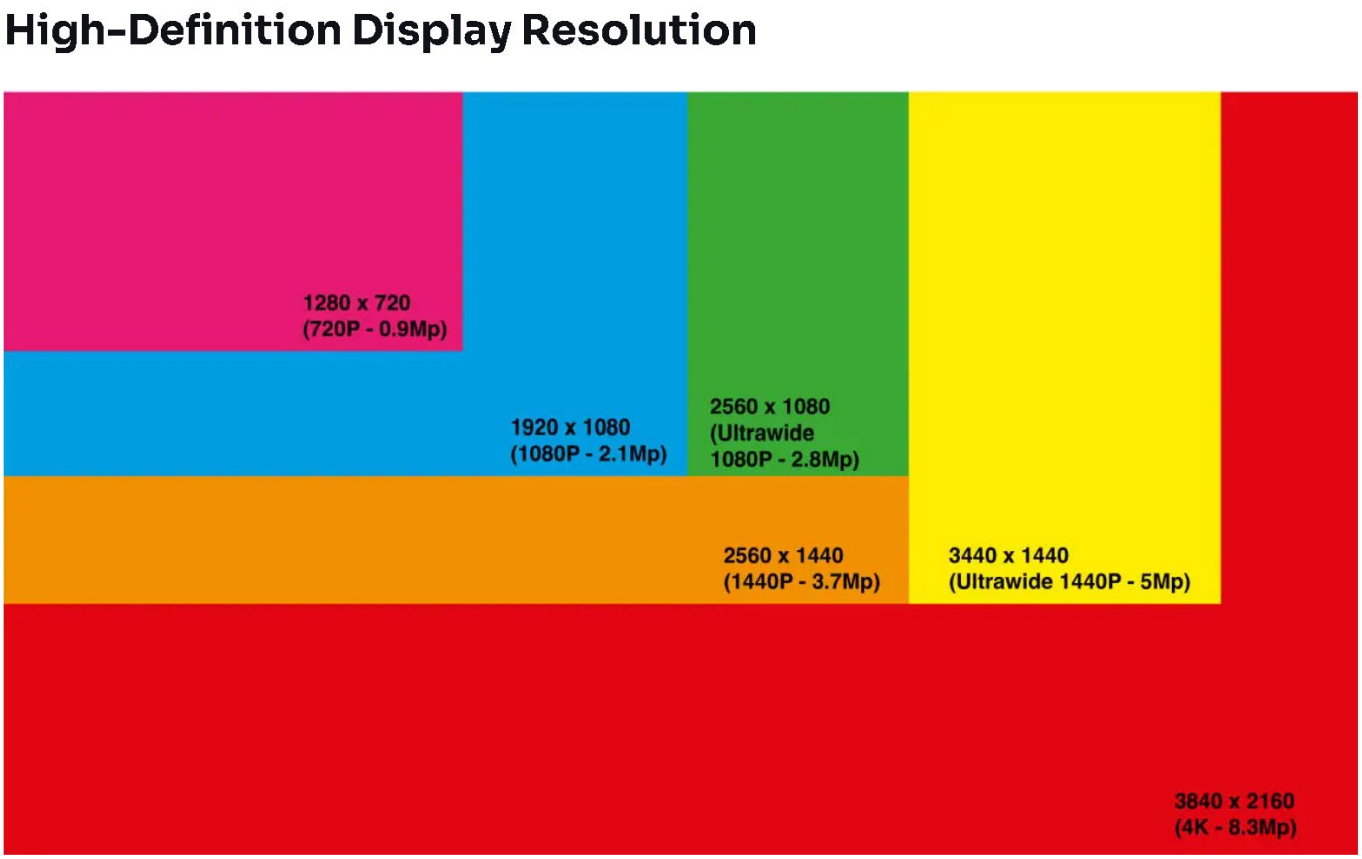
In the above example, all of the blue and green information is presented to the right eye but none of the left image red color data has been used in deriving the output red channel. Instead, 30% of the green channel and 70% of the blue channel are used are both are brightened by 50%.
This would eliminate rivalry caused by the red component of the image but color reproduction is obviously not accurate. If subjects with saturated blue or green components are causing problems, you could try altering the color mix of the output green and blue channels.

OPTIONAL: Apply a gamma correction (gamma value 1.5) to brighten up final red channel r_a. This is the LEFT image in Stereophotomaker. To do this in the multiple process menu select adjust gamma and enter 1.5 for LEFT panel.

Red/Cyan Glasses:

American Paper Optics www.3dglassesonline.com
1x 3D Anaglyph - Red Cyan - 300 at $0.35 each for $105.00 each

Projection sizes: Digital projection*** of jpgs: size depends on projector resolution.



Digital Projectors:

Some basic choices for native resolution are the following:

1. **SVGA (800x600)** - SVGA projectors are great for those on a tight budget, since prices have dropped dramatically in recent years. While most computers still output in higher resolution, SVGA can be a good option for Powerpoint presentations or other applications that are not heavily dependent on detail.
2. **XGA (1024x768)** - XGA projectors have come down in price over the past few years, and have become the budget standard. Many laptop computers still output in native XGA, and matching an XGA projector to your native XGA laptop ensures you won't lose any detail.
3. **HD (1280x720)**: high definition
4. **WXGA (1280x800)** - WXGA products are high resolution widescreen products, and usually a bit more expensive than XGA. These products are targeted for use with mid-range widescreen laptops, which often use 1280x800 natively. They are becoming increasingly common and are used as an inexpensive widescreen alternative to XGA.

5. ***SXGA+ (1400x1050 this is the Canon SX80 MarkII projector native resolution)** - SXGA+ resolution is useful for detailed photography and data graphics, but overkill for text display or Powerpoint presentations.
6. **UXGA (1600x1200)** - UXGA is for very high resolution workstation applications that are detail or information intensive. These are expensive projectors that support a broad range of computer equipment. Relatively few products on the market have this native resolution.
7. **2K or QHD (2560x1440)**. “Quad HD”
8. **4K or UHD (4096 x 2160)**: 4K is an emerging standard for 16:9 movies, but most projectors in 2024 are of lesser resolution. Frequently, online “4K” is actually 2K upscaled at the source.
9. **8K or UHD-2 (7680x4320)**: This is a not yeat realized deployment for common equipment in 2024.
10. **Polarized half width 1920x1080.**
    Used by D. Pellerin London Steroscopic. Prepare halves at 1040 height, and save in SPM as side-by-side 3840 x 1040 pixels.
    PPT graphics can be prepared on a 96dpi layout measuring 40" wide x 11" high (this is 3840w x 1056h) centering the halves at left-10", right-30".
    Save PPT slides as separate tiff files.
    Add 10 pixels to top and bottom in photoshop by increasing canvas size to 3840x1080 with black edge.Then, resize in photoshop to 1920w x1080h.

Images intended for display on 3D DLP TV's should be 1280x720 or 1920x1080 depending upon the native resolution of your TV.

Powerpoint onscreen aspect ratio 4:3 width:height

Std PPT “onscreen” is 10” x 7.5” at 96dpi or 960x720.
THIS DOES NOT ALLOW HIGH REZ SAVES. all will be at 96dpi.

XGA projector is 1024x768 (PPT 1024x768)
XGA PPT is 10.67” x 8” at 96 dpi to get 1024 x 768
Do as TIF

SXGA projector is 1400x1050 (PPT 1440x1080)
Closest PPT SXGA is 15” x 11.25” at 96dpi for 1440 x 1080
Do as JPG

4K Projectors (Such as the LG HU810P) are 3840x2160 pixels in a 16:9 aspect ratio
For PPT 3840x2160, or 4K is 40” x 22.5” at 96dpi
Can save as any format (jpg, tif, png, etc)

Powerpoint Settings (PPTX file) for projection:

Automatic compression in PPT must be disabled, and output targets set to retain resolution. Otherwise, images will be degraded. File will save as PPTX.

Slide Master: Pixel Density and sizes for different projector resolutions.

HD=1440 px wide:
Best Option to output High Definition images:
Page setup is 15" x 11.25".
Pixel resolution: 96dpi
This will perfectly fit a 1440 x 1080 pixel image at 96 dpi withouut resizing.
Set output at 96dpi

Full 4k (3840x2160px):
Page Setup is 40.0" x 22.5"
Pixel resolution: set for high fidelity. "Prints" at 96dpi
This will perfectly fit a 3840x2160 pixel image to print at 96 dpi without resizing

Turn off compression
File>Options>Advanced>Image Size and Quality
Check "Do not compress images in File"
Set Default Target Output to 96 dpi. This is good for projection, and will prevent compression by the projector

Set Resolution for Projection
Slide Show>Resolution
"Show On" is hardware selection for projector. Pick attached projector.
Pick highest resolution available

Powerpoint Settings for Exporting Slide JPGs

Choose File Format:
File>Save as (usually use tif as jpg produces compression ghosting in PPT)

Choose Resolution: from "Compress Pictures" dropdown box.
Generally select "document resolution"

This will generate a series of TIFFs which can be projected as is, or converted by a program such as Adobe Lightroom or Photoshop to a jpg file (NO compresssion, use 100% quality).

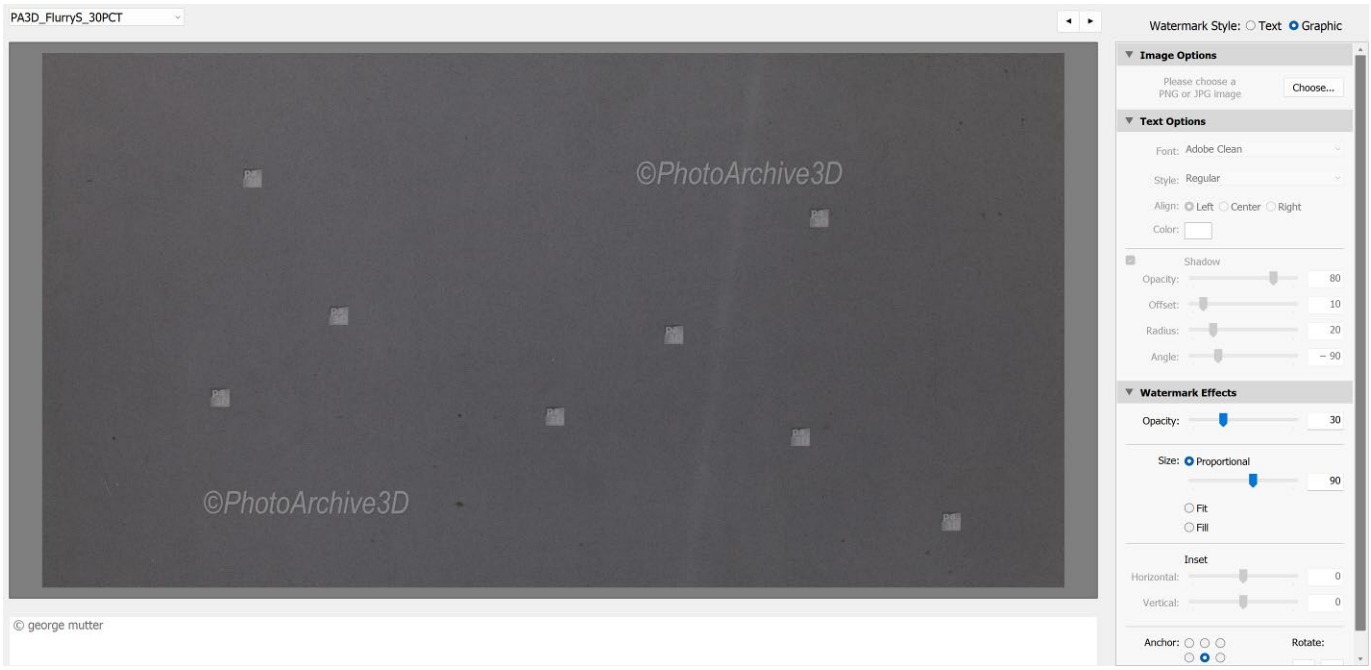
JPGs or TIFs can be projected directly as individual files.

Embossed Watermark with Lightroom:

Text:
Applied to all online images >300 pixels maximum dimension.
© Note that the shortcut for the copyright symbol is 00A9 Unicode Hex.
Invoked by shortcut Alt+0169
Format:
Best to do as translucent embossed text, including © at beginning
Matching Color Embossed Text Overlay is exact designation

PA3D Watermark for public deployment

Use png template created in Adobe Illustrater, with transparent background.
Set this as an “image” watermark.
Watermark used is “PA3D_Flurry” at 30% transparency. This is deployed with a center anchor at 90% proportional to aspect ratio of the image, which resized watermark to each image.



Printing of Physical Stereocards.

Using procedures in place at www.civilwarin3d.com

David Richardson.

September 2024 Update of Equipment for Digitization

Equipment currently in use is specified above, but the below lists comparable equipment updated as to model as available in 2014

Good Vendors:

Good vendors for Digital Cameras and equipment (has prices):
http://www.bhphotovideo.com/
http://www.calumetphoto.com/

Computer Materials available at PC Connection:
http://www.pcconnection.com

The camera has two models, and either is probably ok. There is a mark II ($2500) and Mark III ($3500). If you need to reduce budget go for the Mark II.

Digital file storage is a system solution. Those listed here are guidelines. You need an IT person to review and recommend based on your environment. But, definitely go for DNG raw file format storage. It is smallest lossless and proactively compatible format available.

Various copystands are available. Biggest problem is diffusing the light so you do not get shadows or hotspots. I use big reflectors with silver diffuser screens, but if you have a good photographer onsite they may have a recommendation. I do not like halogen point sources, and horizontal linear fluorescent DAYLIGHT (4400K) lamps are ok and sometimes available integral to copystand. These are special bulbs.

Item	Mfr	Mfr#	Price	Note
Adobe Lightroom Classic	Adobe			Image catalog software
Canon Eos 5D MarkIII, 22.3MP	Canon	5260B002	3449	Camera Back
Canon EF100mm f/2.8L Macro IS USM	Canon	3554B002	1050	Closeup Lens
Canon EF 50mm f/2.5 Compact Macro Autofocus Lens	canon	2537A003	300	Mid dist Lens
4400K snail fluorescent lamps in 13” dome reflector with diffuser	several			Budget $400 for lights
90’ Angle viewfinder Type C	Canon	2882A002	199	Calumet#CA4111
Lightroom Transporter http://www.photographers-toolbox.com				Metadata importer. to get into lightroom
B6-533 Numbering Machine, Gothic 6-wheel	Reiner	B6		About $250
Remote Switch RS-80N3	Canon	2476A001		

Item	Mfr	Mfr#	Price	Note
Extra Battery for Canon Eos 5D Mark III	Canon			
Copy Stand such as Beseler CS Digital/Photo-Video Copy Stand	Beseler	4211-02		
Netgear 48TB ReadyNAS Pro 6 Unified Storage System w NAS(enterprise)-Class Hard Drives	Netgear	RN628 6x8TB	4K	Need 2, back up primary to offsite second
Blue-Ray M-Disc Writer, for 23 GB discs	any			M-discs are archival metal. essential backup.
32GB CF Memory cards for Camera	Sandisk	SDCFXP-032G-A91	150	Get minimum of 2
128 GB USB solid state (“thumb drive)	various		300	For file transfers
ViceVersa File duplication utility from http://www.tgrmn.com/				Essential to copy big files and verify

VIRTUAL REALITY CONVERSIONS:

VR Target Dimensions: 4200x1400px

Skybox

Aspect Ratios: 4:3, 3:2, 16:9 1440x1080 is 3:2
3D Formats: 2D, 3D-Side by Side, 3D-TopBottom 180°, 360°
Filetypes: mp4, mkv, avi, mov, wmv, rmvb, flv, 3gp, webm, vob
Resolution: HD, fullHD, 4K
The maximum resolution supported is 4096×4096.

3:2 screen ratio = halves of 3:2
SBS ratio is then 6:2, composed of two side by side 3:2 halves
Halve dimensions: 2100 wide, 1400 high
VR side by side dimensions = 4200wide x 1400 high

SPM Side By Side Settings for VR export:

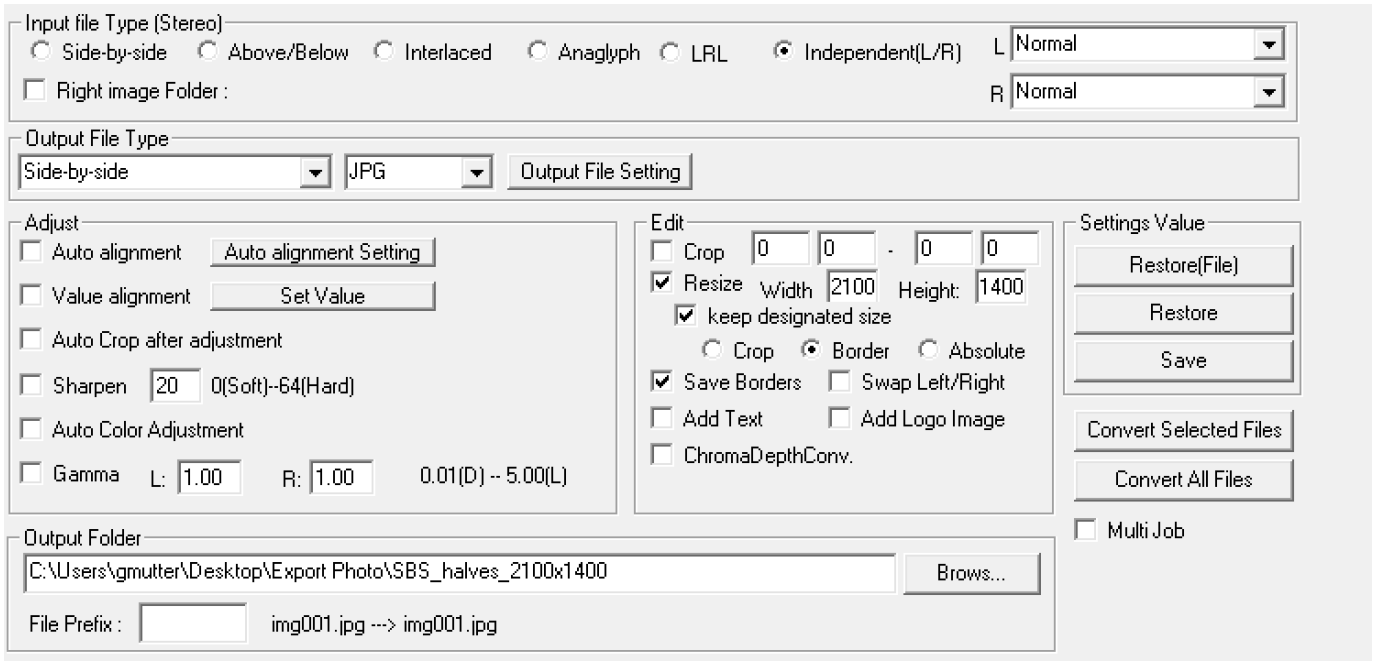
Typical Resolution of halves is height 1900px-2500px

Set image borders to be small,
Inner Border (display, and print/save) 5px. Color = black . Unclick round

Here is how it looks with the settings

Side by side output with a 2px border is total of

Halve dimensions: 2100 wide, 1400 high
Check: keep designated size + border
Check Save Borders
VR side by side dimensions = 4200wide x 1400 high total
VR side by side settings as below:



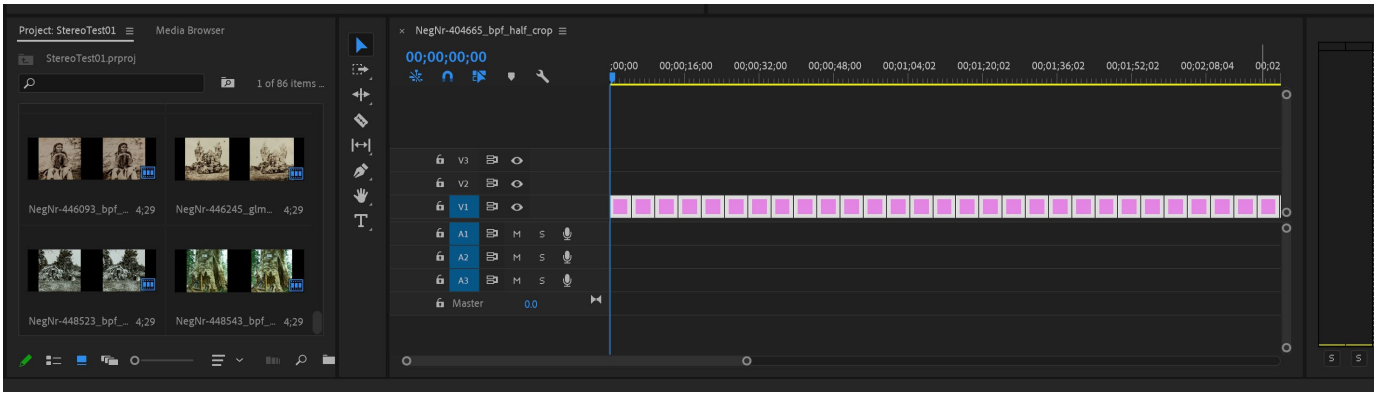
SPM output options
To format images for digital projection, after checking the 'Resize' box you will have the option to 'Keep Aspect-ratio'. (see screenshot at top of page).
On checking that, you will have the option to crop or to apply a border.

NO

YES. Centered and fits inside 6:2 box of two halves of 3:2

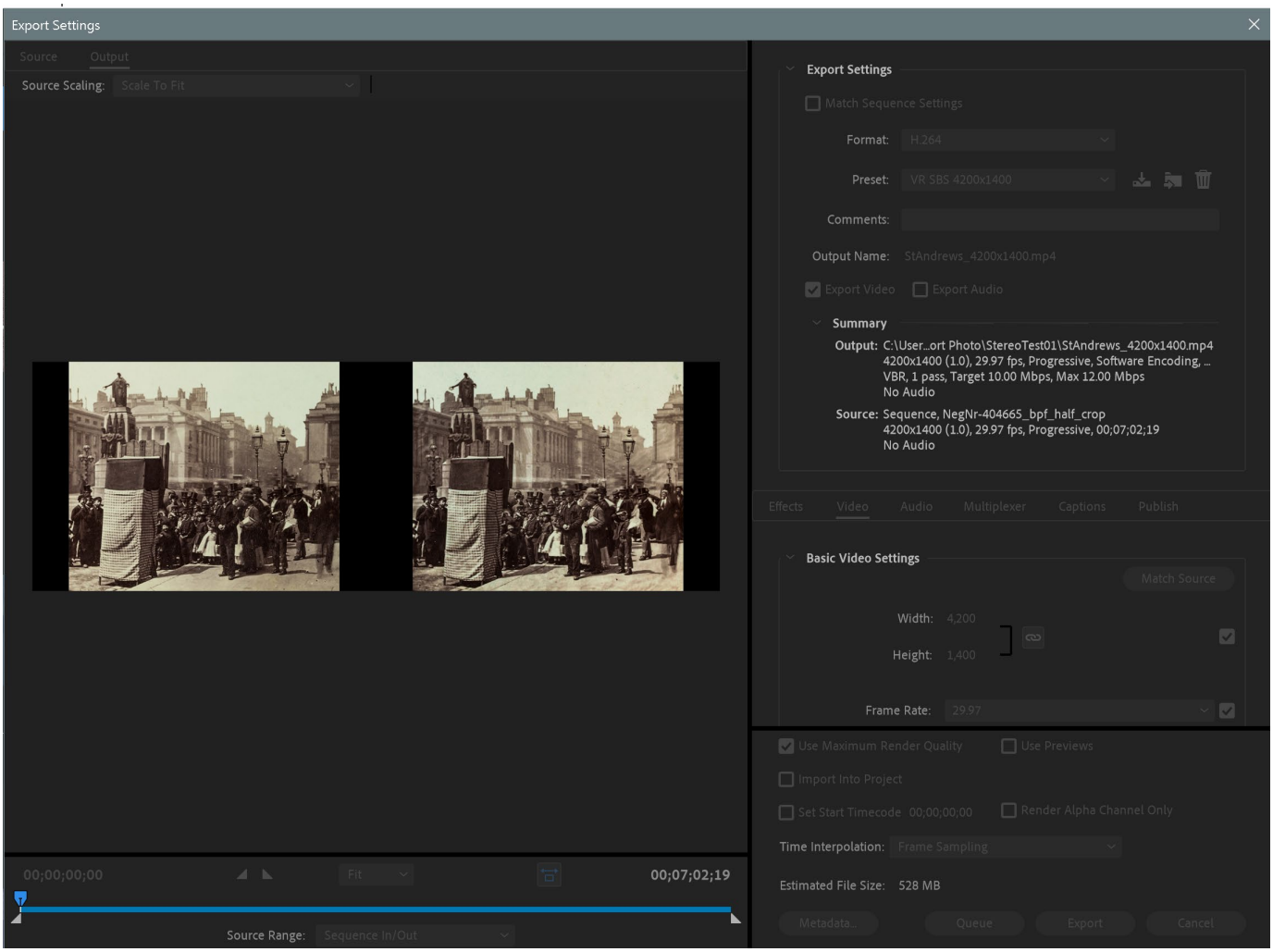
Creating a VR movie in Adobe Premiere Pro

Drop 4200wide x 1400 high images into the Media Browser.
Sort as wished
Select(all) and drag into the video timeline panel
With cursor in timeline panel, “select all”. Images wiil turn pink



Export: File>export>media

Export settings:
Source Scaling: Scale to fit
Format H.264
Preset: Match Source: high bitrate
Export video and audio.
Check “use maximum rener quality.
Time interpolation = Frame sampling



COLORIZATION with AI

Peter Der Manuelian 2021-03-04

AI colorization is intriguing, but still not completely accurate.

Most seem to be having trouble with reds and non-foliage greens, less with humans. Shadows falling across a color changed the color entirely(girl on lily pads). Rarely, the vintage tinting (heavy sepia, for example) got in the way and made everything brown on colorization. Attached are a few PA3D archive examples.

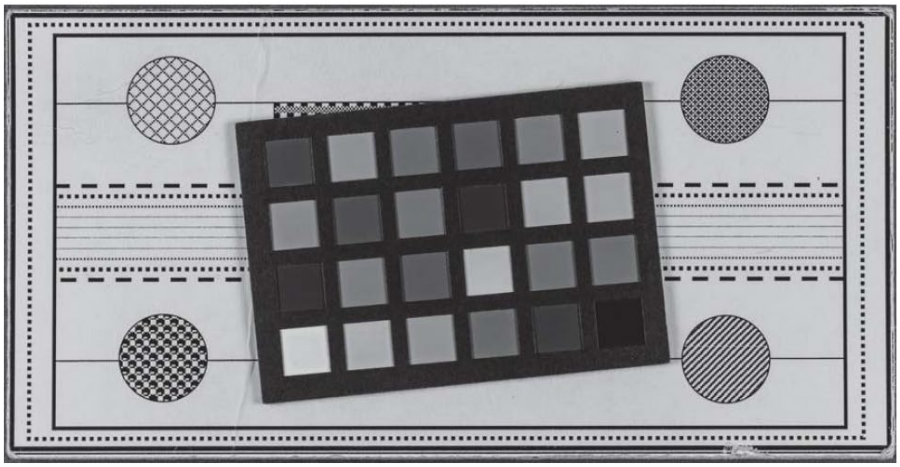
The following examples are an experiment where I took original color images, both film and digital, and removed all color information to make a grayscale image. Then I sent the grayscale images to a re-colorization algorithm (deoldify) in 2021. This allowed comparison of known actual source color with color reconstructed by AI. Results are generally inaccurate, but in many cases quite artistically beautiful. Attached are comparisons of the original-decolorized-colorized series.

It seems that if there are AI-recognizable objects in the image such as humans, water, or foliage, it gets those right and has a chance to calibrate against that standard. I do wonder if varying color-sensitivities of vintage emulsions will require process-specific algorithms for correction. I am waiting for next generation +2 or +3 to really get color accuracy right, expecting it will require some user controls that are lacking here. Thats a problem with ai.

Recolorized Color Chart. Note loss of color fidelity with no AI-recognized objects

Decolor-Recolor deOldify(MyHeritage), 2021-03-04

ZZ_NegNr-023921_aOriginal



ZZ_NegNr-023921_B&W

ZZ_NegNr-023921_Recolor

Colorization Errors:
Left: Red pointsetta flower coded as green leaves. AI miscue.
Right: Loss of color fidelity with no AI reference points

Decolor-Recolor deOldify(MyHeritage), 2021-03-04

ZZ_Mutters_016_aOriginal

ZZ_Mutters_016_B&W

ZZ_Mutters_016_Recolor

Decolor-Recolor deOldify(MyHeritage), 2021-03-04

ZZ_Louvre_2008_Funerary_Equipment_0033_aOriginal

ZZ_Louvre_2008_Funerary_Equipment_0033_B&W

ZZ_Louvre_2008_Funerary_Equipment_0033_Recolor

Aesthetic colorization of vintage images.

1.1930’s Verascope glass Caberet backstage

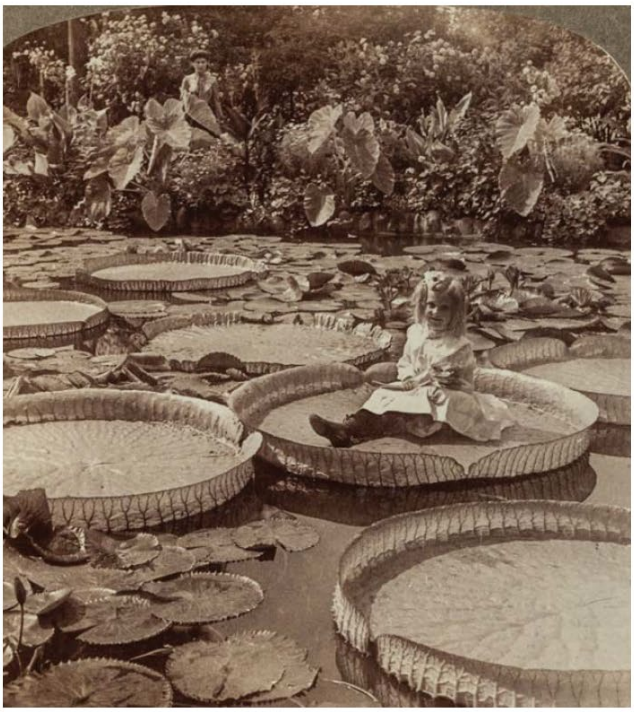
Decolor-Recolor deOldify(MyHeritage), 2021-03-04

Odd_Jobs_NegNr-022010_halves_cropped_l

Odd_Jobs_NegNr-022010_halves_cropped_l-Enhanced-Colorized

2. Paper stereo half. Note green fidelity fails in dress shadow and with lighting conditions on pads.

Decolor-Recolor deOldify(MyHeritage), 2021-03-04



Censors_Choice_NegNr-434212_halves_cropped_l

Censors_Choice_NegNr-434212_halves_cropped_l-Colorized