



Columbia Council of Camera Clubs

2019 Convention Session

Image Blending

Tad Hetu

Image Blending

- What it is & Why you do it
- Types
 1. Panorama
 2. Focus
 3. Perspective
 4. Exposure
- Example Demonstration(s)
- Q&A

Image Blending

What it is

- ✓ Combining multiple frames into a single image
 - *This is an artistic endeavor; not a documentary effort*

Why do it

1. Overcome limitations of your camera

- I. Field of View
- II. Dynamic Range
- III. DOF / Focus
- IV. Pixel density and scope of frame
- V. Lens distortion

2. Expand Creativity

- Create an Image & Tell a Storynot just take a picture



Camera Limitations

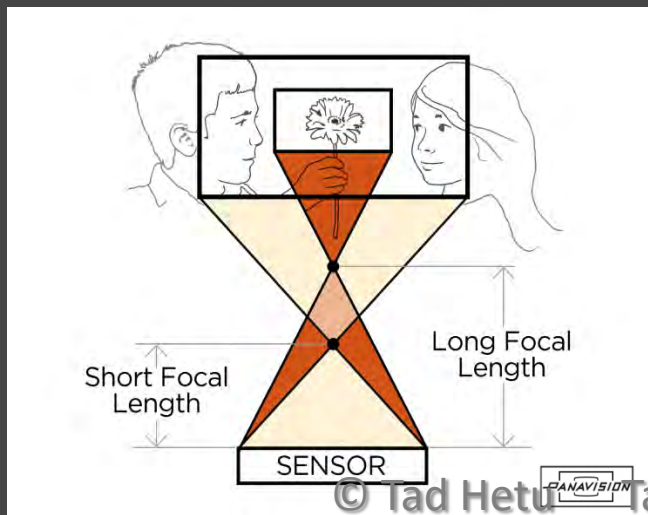
What We See vs. Cameras

Field of View



We See:

- ~140 degree field of vision
- Automatic correction for distortion
- Equivalent to fisheye lens



The Camera:

- Set by Lens & Sensor Size



Camera Limitations

What We See vs. Cameras

Dynamic Range



Human Eye

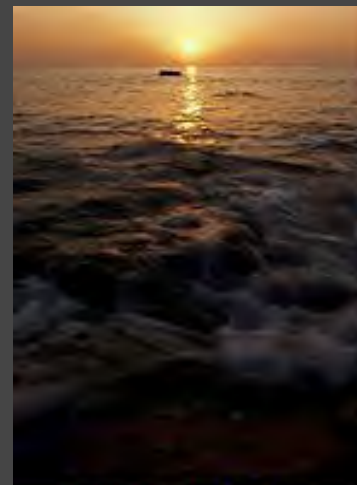
← 24 EV →

- Best of Class dSLR ~11-15 EV
- Human eye ~ 20-24 EV

← 11-15 →

dSLR

Our eyes are a
remarkable HDR machine



Eye Focuses on
Background



Eye Focuses on
Foreground



Our Mental Image

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Camera Limitations

What We See vs. Cameras

Focus



The (young) eye can instantaneously change focus from infinity to a few inches.

We see
everything in
focus

The Camera can
not



..Or..



Move From Camera-Limited to Creating What You Want with Artistic Freedom

Optimizing

- ✓ Dynamic Range
- ✓ Focus
- ✓ Field of View
- ✓ Time & Motion

Image Blending

- What it is & Why you do it
- Types

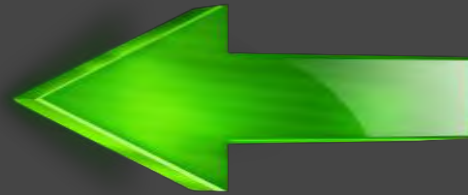
1. Panorama

2. Focus

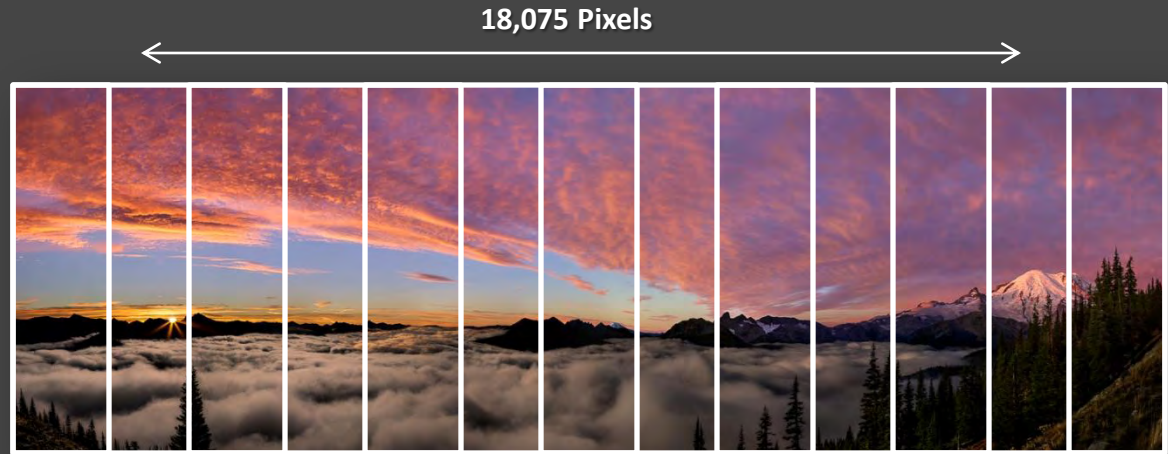
3. Perspective

4. Exposure

- Example Demonstration
- Q&A

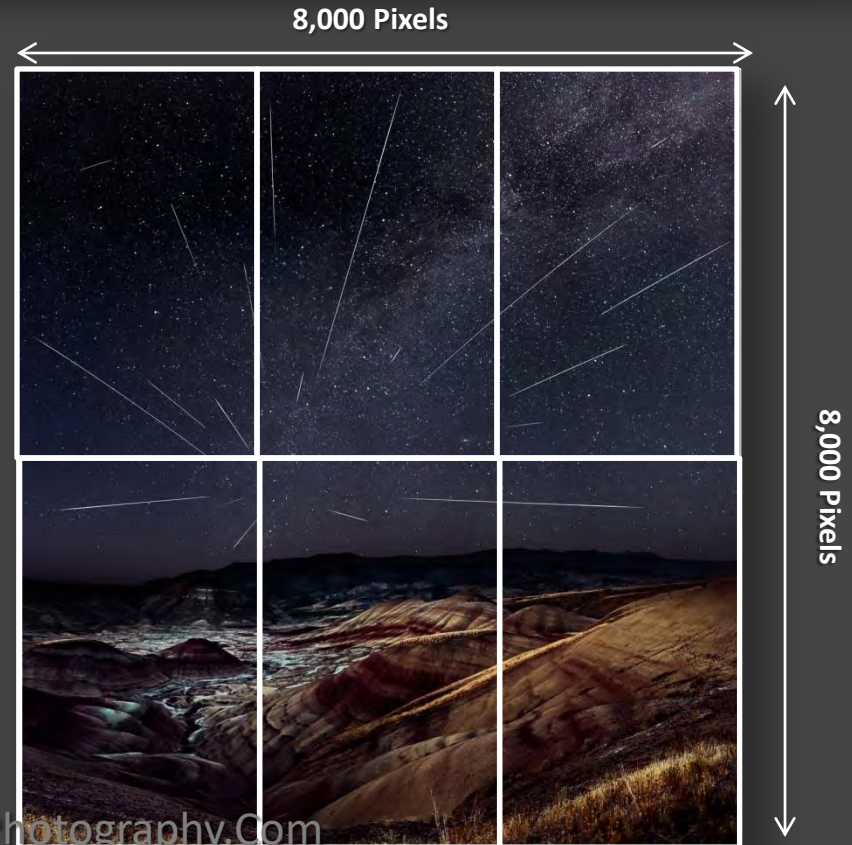


Panorama



Why?

- Wide Angle w/out distortion
- Arguably a sharper image if blended from the center of frames
- Change aspect ratio
- Increase pixel density



Panorama Implementation

- Shoot Vertical (*for horiz. pan*)
- Overlap images 30-50%
- Rotate around 'Nodal Point' to avoid parallax error (*diff. for each lens*)
- Keep exposures similar
- Auto Blend:

In Photoshop: 1. Edit → Auto Align Layers
2. Edit → Auto-Blend Layers
→ Panorama

In Light Room: Photo → Photo Merge
→ Panorama

LR → PS Direct: RC → Edit In → Merge to
Panorama in PS

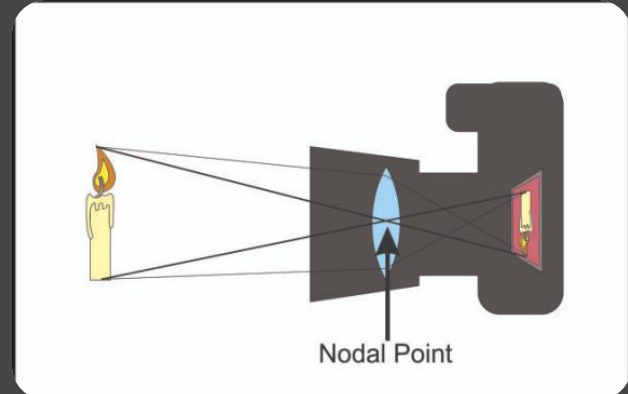
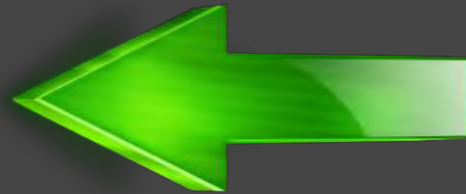


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Focus Stacking

- Hyperfocal Distance
 - Still can do it, but why?
 - Film is cheap now ($\sim \frac{1}{2}$ cent per frame)
- Technique — *Shoot multiple frames*
 1. Manually focus on nearest object, spin focus ring and shoot, repeat, manually focus on farthest object
 2. Keep focus constant, move camera
 3. Touch AF in Live View



Focus Stacking Implementation

- Adobe Lightroom

- Select Images To Stack

- RC → Photo Merge → Panorama



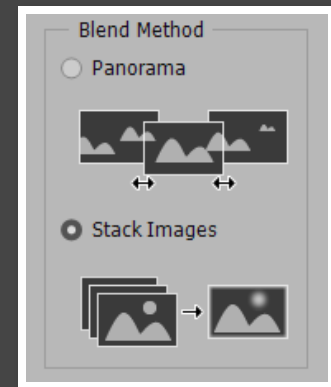
☒ Create Stack

- Adobe Photoshop

- Open images as layers in PS

- 1. Edit → Auto-Align Layers

- 2. Edit → Auto-Blend Layers



- 3rd Party Programs

- Helicon Focus



- Zerene Stacker

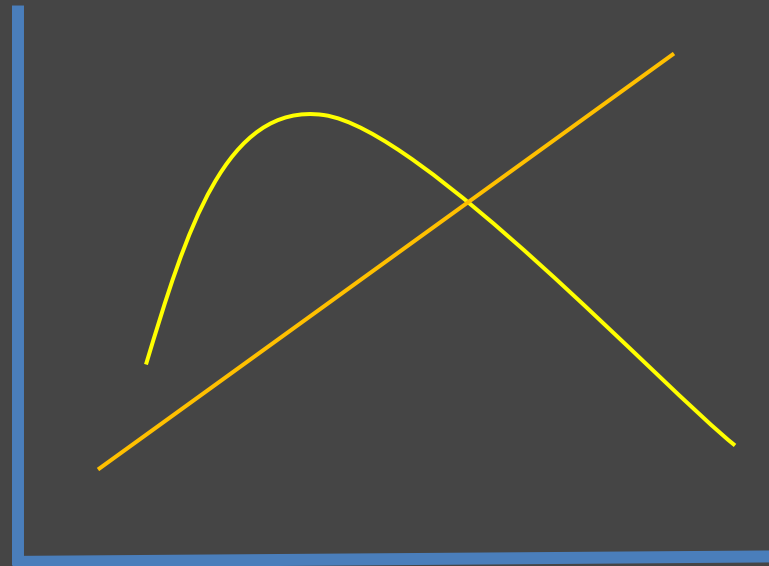


- Others....

- ✓ More Control
- ✓ Options for Methods & Algorithms
- ✓ Touch up capability
- ✓ Save Project option for later work

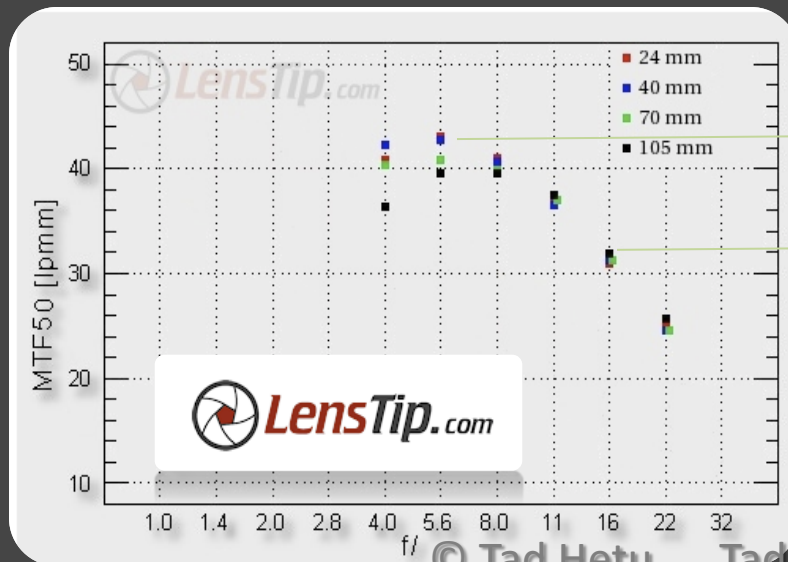
Impact of Aperture on DOF & IQ

DOF
Image Quality



F Stop →

Canon EF 24-105 mm f/4L IS USM



f 5.6
44 LPMM

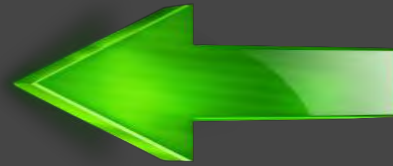
f 16
32 LPMM

f 5.6 vs. f 16
27% Reduction in Image Quality

41% Reduction in Image Quality @ f 22

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Perspective Blending



90 mm

30 mm



=

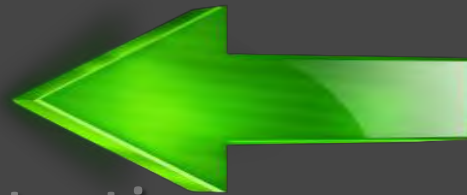


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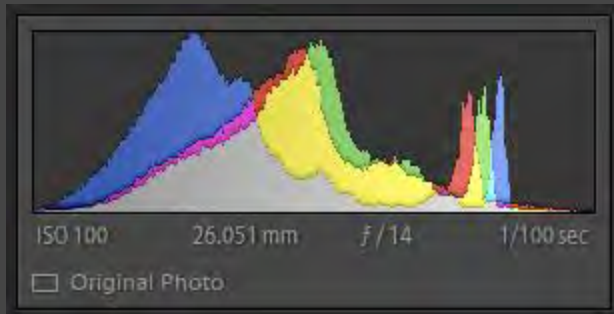


Exposure Blending

Why?

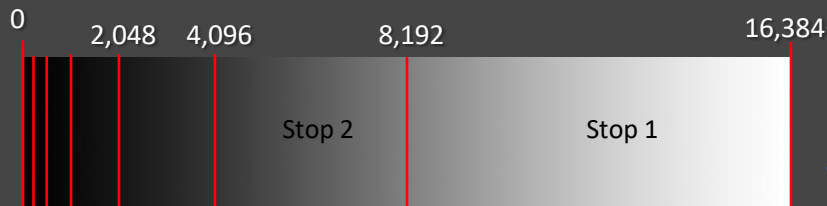
- Extend Dynamic Range
 - If you're off the chart → You're Toast

1. Watch your Histogram
...don't lose data
2. Maximize the digital Info in
your capture

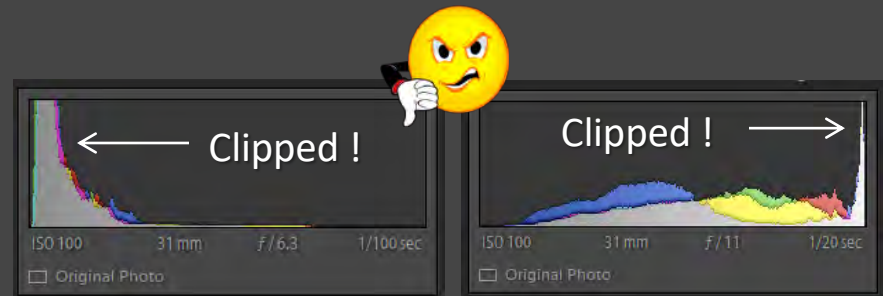


- ETTR

Brightest f Stop = 50% of your data



14 bit RAW File = $2^{14} = 16,384$



RAW File Size
= 19.7 MB

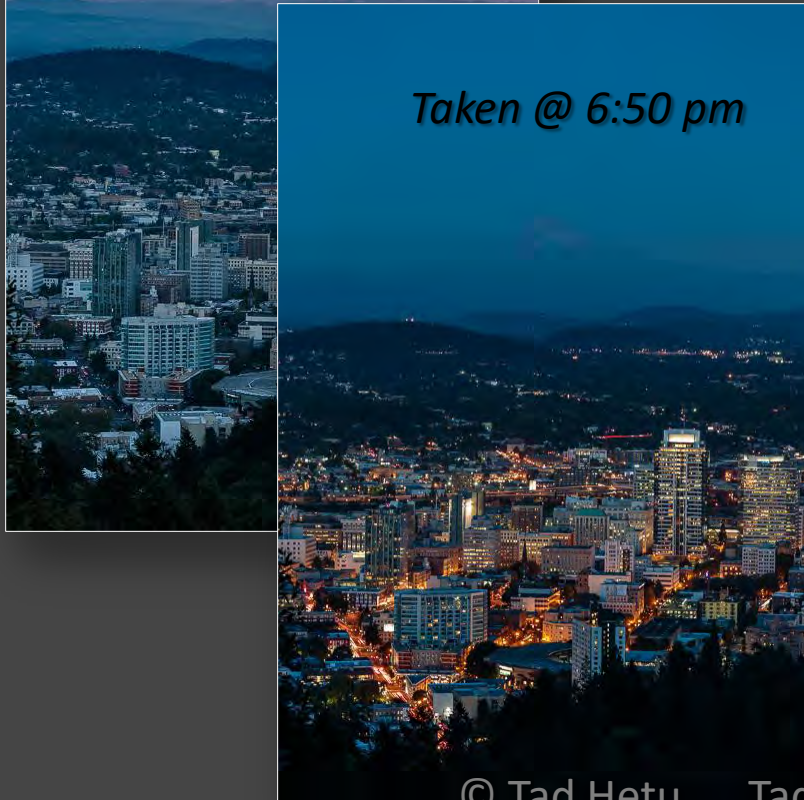
RAW File Size
= 31.3 MB

60% larger file!

Exposure Blending Example

Simple Blend of Two Exposures
Hand Blended with Adjustment Brush

✓ *Dynamic Range*
✓ *Time Shift*



Examples & Demos



A Change In Behavior



Don't shoot what you see.....

...Shoot for what you want it to be.

V

✓ Visualize your final image

P

✓ Plan your shots

E

✓ Execute to collect “RAW” material

Exposure Blending Example

Moderate Complexity

Five Images Hand Blended with Adjustment Brushes

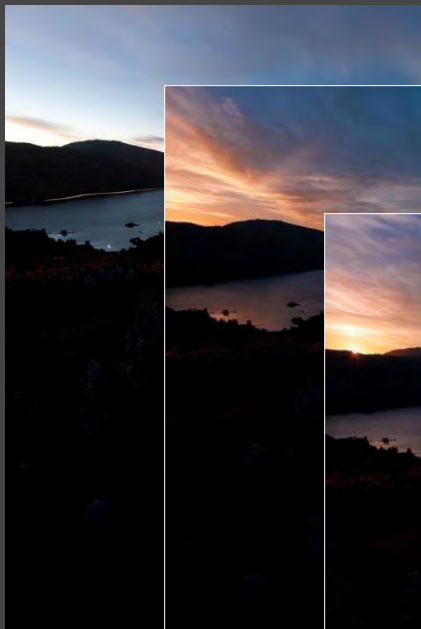


Image 1 -- Road Lights @ 4:30 AM (180 Sec @ f 6.3)

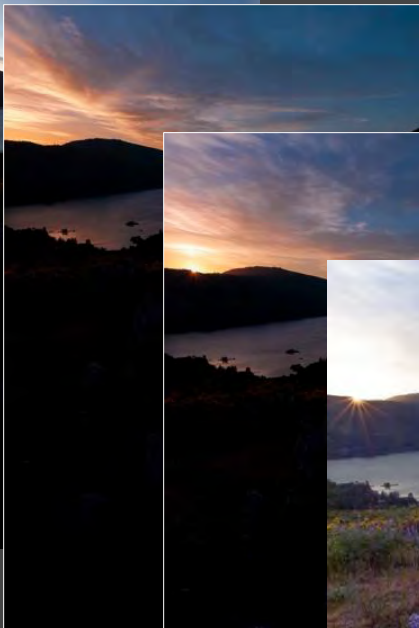


Image 2 --Sky 1 @ 5:50AM

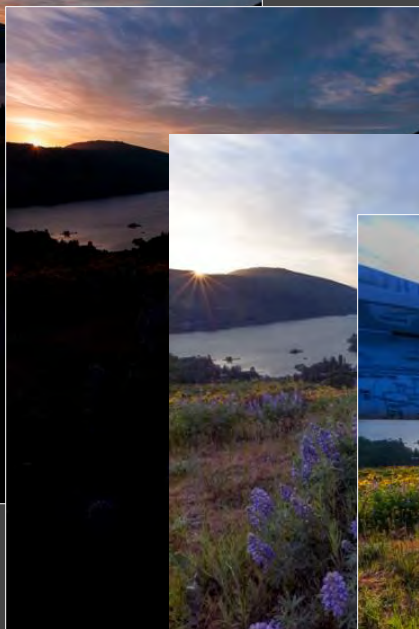


Image 3 --Sky 2 @ 6:00AM



Image 4 --Sun Star (@ f 22) @ 6:03AM



Image 5 -- Flowers @ 6:05 AM

Final Image



Exposure Blending Example

Higher Complexity

Multiple images for Focus Stack + Images for Exposure
Blended with Adjustment Brushes using custom masks

Focus Stack (7)



Stacked Image



Sky



=

+

+

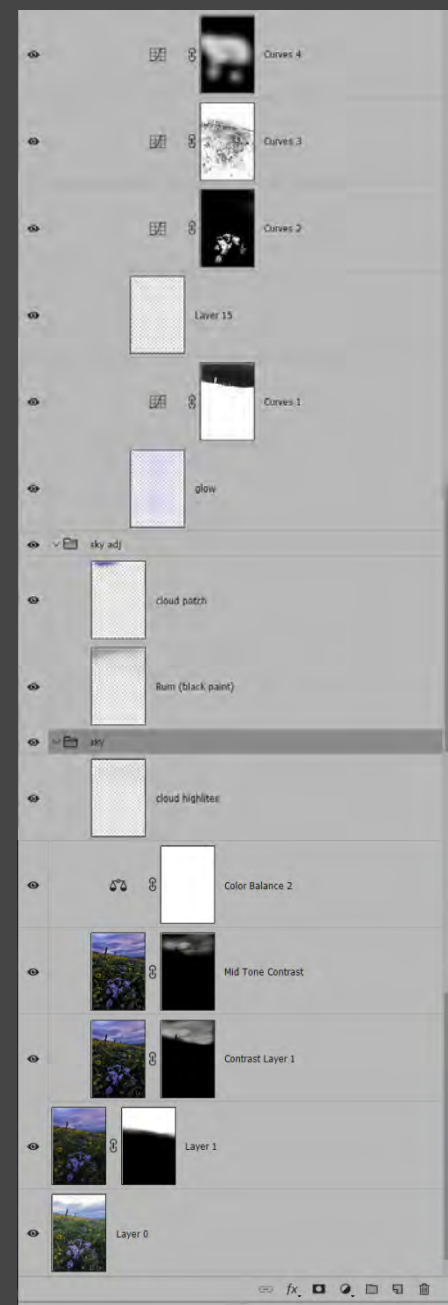
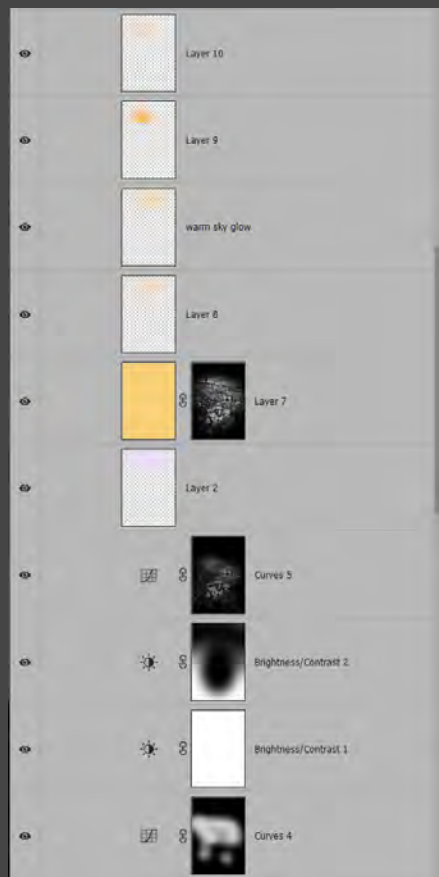
Creative
Adjustments

Final Image

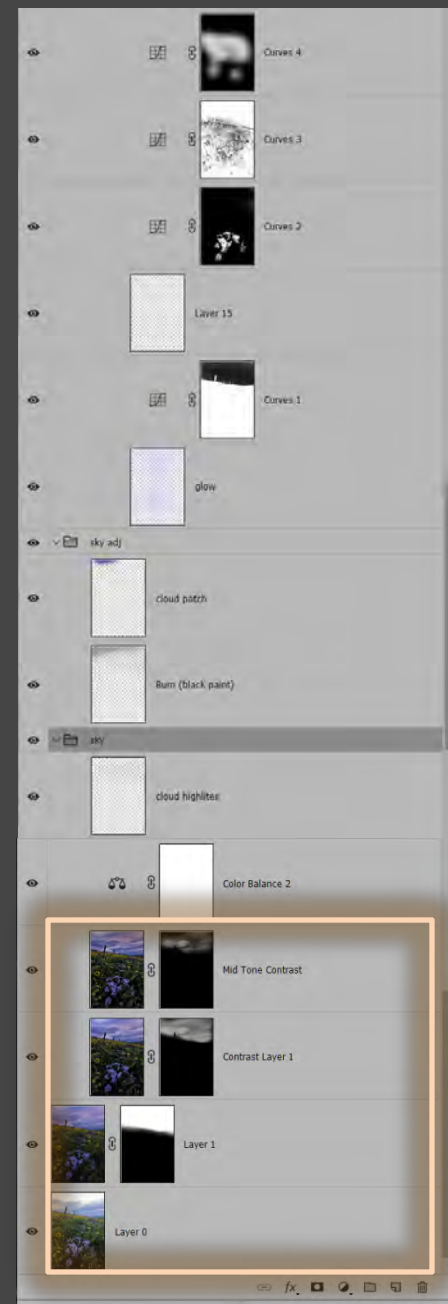
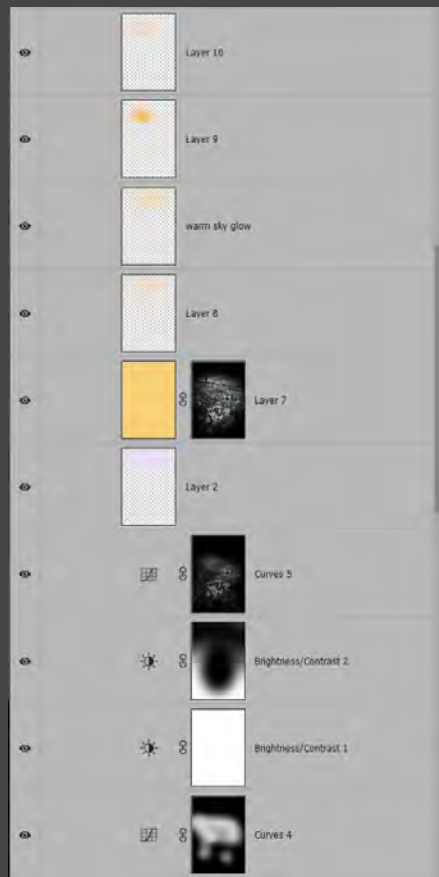


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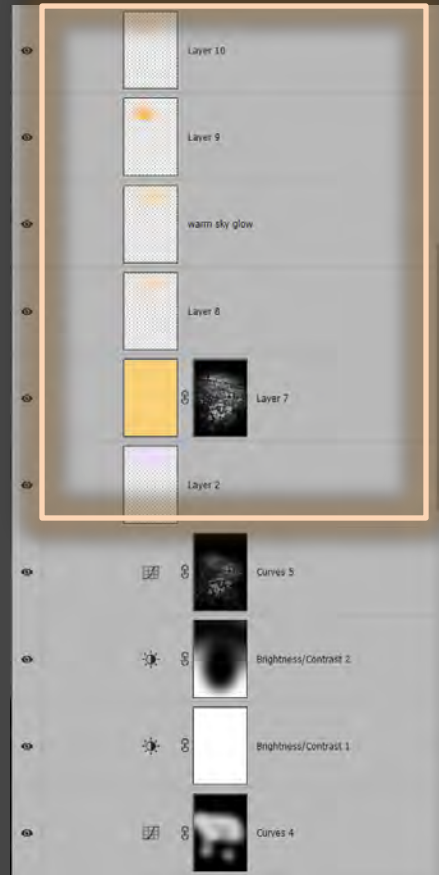
Image Adjustment Layers



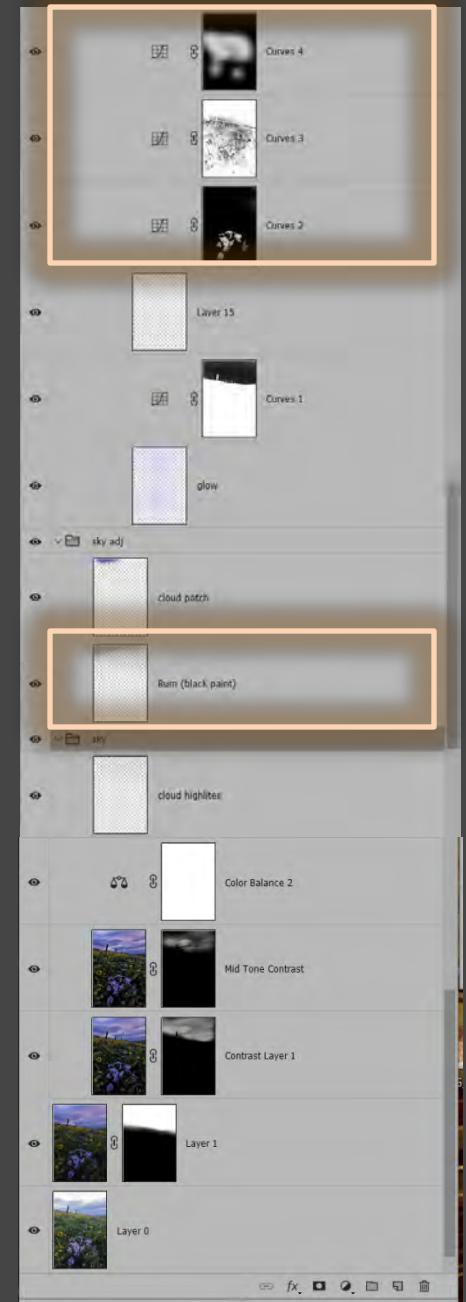
Pixel Adjustments & Blends



Color Adjustments



Tonal Adjustments



Example & Demo



Summary

- Go Forth and Create
- Don't be bound by the constraints of your camera
 - Aspect Ratio, Focus, Dynamic Range, Pixel Density, etc.
- Don't be bound by 'the single click' constraint
 - Time, Motion, etc
- Visualize & Plan what you want to achieve
 - Think “V P E”
 - Shoot to gather “RAW” material
- Have fun

***“Don't take a photograph,
Create an image”***

Q & A

Copies of this presentation are available for download at:

columbiacameraclubs.org

Off-Line Questions & Comments:



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