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Country Images Camera Club

Focus Stacking Workshop

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What is Focus Stacking?

Focus stacking is a technique that allows us to blend together a series of images that all have slightly different focus points, enabling us to cover a much larger range of depth of field than a single shot.

Focus stacking also enables us to shoot each individual image at a more optimal aperture, this allows us to retain sharpness while increasing the depth of field.

When To Uses Focus Stacking?

Landscape photography: one may wish to obtain a vast depth of field, while also avoiding softness at the focal plane due to diffraction. This can enable a much larger and sharper print than otherwise possible.

Macro photography: one may wish to achieve a greater depth of field than otherwise obtainable using the lens's maximum f-stop (often f/22 or f/32 with SLR cameras)

Low-light photography: one may want to avoid a prohibitively long exposure time. Alternatively, one may wish to freeze motion in part of their image (such as with a moving subject), but also to preserve an expansive depth of field in other parts of the photo (without resorting to using a flash)

Why Not Just Increase F Stop?

Choosing a higher f-stop also has its disadvantages.

It increases the necessary exposure time, and in extreme cases, it can also reduce image sharpness due to diffraction. Furthermore, one might desire a greater depth of field than a particular lens's maximum f-stop is able to provide.

Necessary Equipment

Digital Camera (DSLR)

Tripod

Cable Release

Focusing Rail (optional)

Shooting The Stack

Setup

- 1) Choose your Subject
- 2) Set up your equipment
- 2) Set your composition (Leave room around the edges of your subject, you will be cropping after the stack is processed)
- 3) Set your f stop (f8, f11 or f16)(sharpest range)
- 4) Set camera to aperture priority take a reading for your chosen f stop
- 5) Set the camera to manual and apply the aperture priority reading (allows a consistent exposure throughout the stack)

How To Focus

- 1) Set your focus to the closest point of your subject . (Tip: place your hand or a card in front of lens and expose the frame. Do this at the beginning and end of each series of frames. This way, when you download your images you'll know which frames go with which stack)
- 2) Expose your first frame.
- 3) Change your focus point (towards the rear of your subject) ever so slightly.

The idea is to have your depth of field overlap each other.

The shift in your focus point is depended on the subject you're shooting.

Macro use small shifts, Landscapes use larger shifts.

With practice you'll learn how much shift is required for your subject.

- 4) Expose the frame.
- 5) Repeat steps 3 and 4 until your subject has been fully covered.

Processing The Stack (CS4, CS5 and CS6)

- 1) Process the images in *Lightroom* or *Adobe Camera RAW* (ACR) using the same settings for each one.
- 2) In *Lightroom* : select the images to form the stack (**DO NOT** mix up the order they were shot in. If you do the computer will not be able to process the images correctly).

Once highlighted go to Photo- Edit In - Open In Photoshop As Layers

In *Adobe Bridge* : select the images to form the stack (**DO NOT** mix up the order they were shot in. If you do the computer will not be able to process the images correctly).

Once highlighted go to Tools - Photoshop - Load Files into Photoshop Layers

This will open Photoshop and each of the frames will become a separate layer, with your first frame being at the top of the stack.

- 3) In *Photoshop*: Select all the layers (highlight the first layer holding the Shift key down click on the last layer)

Once all the layers are highlighted go to Edit - Auto Align Layers

This aligns each of the layers one on top of the other. This step is necessary because each time your focus point shifted your image shifts as well.

In the Auto-Align dialog, make sure to choose Auto as the projection method.

- 4) Once you have all the layers aligned and all the layers are still selected

Go to Edit - Auto Blend Layers

In the Auto-Blend Layers dialog, choose Stack Images as the Blend Method and make sure Seamless Tones and Colors is checked

Auto-Blend creates a mask for each stacked layer so that only the portions of the image that are in focus are visible.

- 5) To continue working on your focus-stacked image
Go to Layer - Flatten Image (This will merge all the layers down into one photo)
- 6) Finish To Taste.