Focus Stacking with only Photoshop Elements

Focus stacking means the use of multiple exposures focussed at slightly different planes of focus with the in-focus parts from the “stack” of images then combined into a single image with what appears to be a much greater depth of field than would be otherwise possible.

The following article perked my interest:

Focus Stacking in Macro Photography
By Erez Marom
http://www.dpreview.com/articles/5717972844/focus-stacking-in-macro-photography

I had thought that focus stacking required specialised software. However, this article claims that this can be done quite simply in Photoshop Elements using the same module used to make composite panoramas.

*Note that users of the full version of Photoshop can do Focus Stacking as standard. However, for those unwilling to pay the price of a full version of Photoshop, I thought that this technique was well worth a try.*

Unfortunately, when I tried the technique described in the above article, I found that it simply did not work (or they somehow had an additional module not present in the standard version—I have PSE 11.)

However, after some experimentation with PSE 11, I found that I could manage a good approximation to Focus Stacking using PSE combined with a modest amount of manual manipulation.

**Taking your Images for Stacking:**

1) Mount your camera on a tripod and use a remote shutter release or your camera’s timer delay. Switch off image stabilisation since tripods and stabilisation don’t mix.

2) Use a narrow aperture such as f/16 but not too narrow since resolution typically falls off at the smallest apertures (but where this happens depends on your lens). Experiment to see when this happens with your macro lens. (For example, I have an old Minolta macro that seems pin sharp without colour fringing even at the smallest aperture.)

3) Switch to manual focus and focus on the front of your object(s). Take your first exposure.

4) Gently move your focus further into your object and take another exposure.

5) Repeat until you have reached the back of your object.

6) The number of images you need will depend on many factors. Take more than you need and discard any images that do not contribute to sharp edges on your object.
Focus Stacking Method:

1) Open all the images you wish to stack together in PSE. Make certain you have them as 8 bit TIFF if importing from RAW or as JPGs.
2) In the menu, go to Enhance > Photomerge > Panorama.
3) Select Add Open Files and Auto.

It doesn’t seem to matter if you leave Blend Images Together selected or not. PSE will now combine your images as layers in the same new image. It will then ask you if you wish to fill in the edges automatically. If you have a slower machine or have limited memory, it is best to click No.

4) You will have your source images and the new composite image all open (tabs across the top). You can use these tabs to check that the bottom (most distant) image is on the bottom of the stack in the new composite image with the nearest on top. Drag and drop to rearrange them if they are not in that order. If you shoot front to back, PSE seems to arrange them in the correct order automatically.

Note how each of the original images is now a layer with the top ones masked out (black).
Note: Only the bottom layer is visible and hence the nearer objects are still appear out of focus.

5) Select the Brush tool with colours as the standard black and white.

Set opacity to 100%. Click on the black mask area on the top (nearest) image and then paint over the nearest object not on the mask but on the main screen. This will unmask the near object and layers pallet will look like this:

There seems no need to be precise about it since the far background is almost as much out of focus for the top image as for the bottom image. It also does not seem to matter if the black or the white is the selected under COLOR as PSE seems to automatically give you the right brush colour for the appropriate mask type.

6) Repeat with the next layer: select the Brush tool, select that layer and then the black layer mask and then paint on the main screen over the next object. The layers will now look like this:
You now have all three objects (in this case 3 cherry tomatoes) in what appears to be sharp focus.

7) Combine the layers (Layers > Flatten Image). You now have a single layer. Clean up your image and trim off any parts around the edges if they did not combine completely. Save your new image.

Please try this for yourselves and let me know if it works for you.

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