

Focus Merging and Editing the Source Layers in Affinity Photo

By Andy Mills LRPS

Introduction

The Focus Merge feature, sometimes known as Focus Stacking, is used to create an image which has greater depth of field by opening multiple equivalent images and merging the areas that are in focus from these source images to form one output image which has optimum focus over a greater area.

In most cases Affinity Photo does a good job of merging the areas that are in focus from multiple source images but in some cases it needs a little manual help to pick the right areas of the source images to create the merged output image.

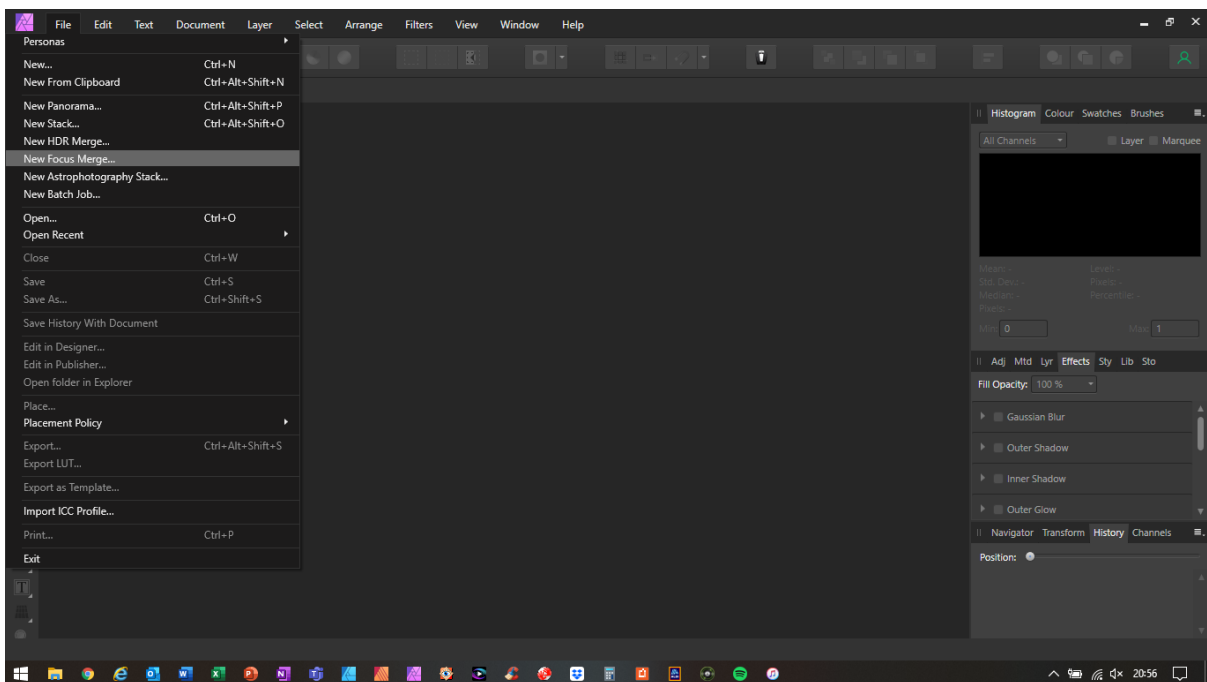
Focus Merge

A useful photographic technique to overcome a camera's limited depth of field in some situations is to take a series of photographs which are identical in every way apart from the focus. By adjusting the focus slightly between each photo, it is possible to get all parts of the scene in focus, from a small depth of field (area in focus) in each source image. Affinity Photo can then take the area in focus from each source image and combine all the in-focus areas into one composite image which has a very large depth of field.

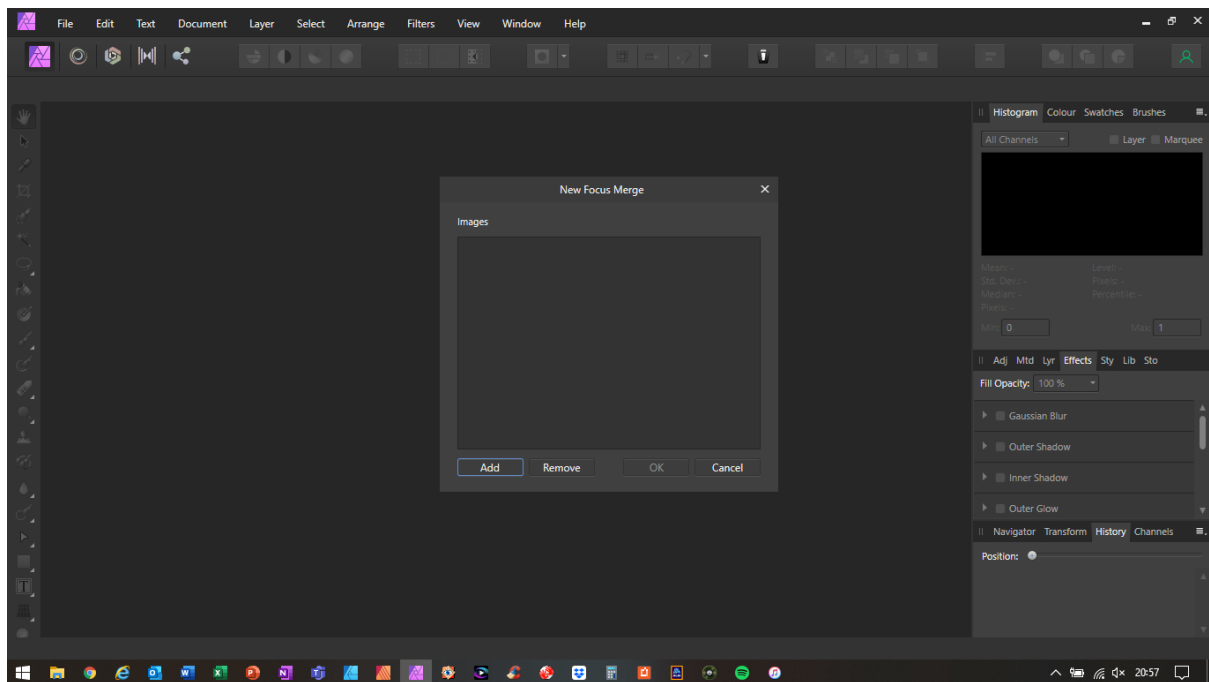
In most cases, Affinity Photo gives a good focus-merged output that does not require manual adjustment afterwards. In the following example only two source images will be Focus Merged. This is deliberate because it gives an output which requires some manual optimisation after merging so that this example covers the manual adjustment steps too.

To use the Focus Merge feature, open Affinity Photo without opening an image.

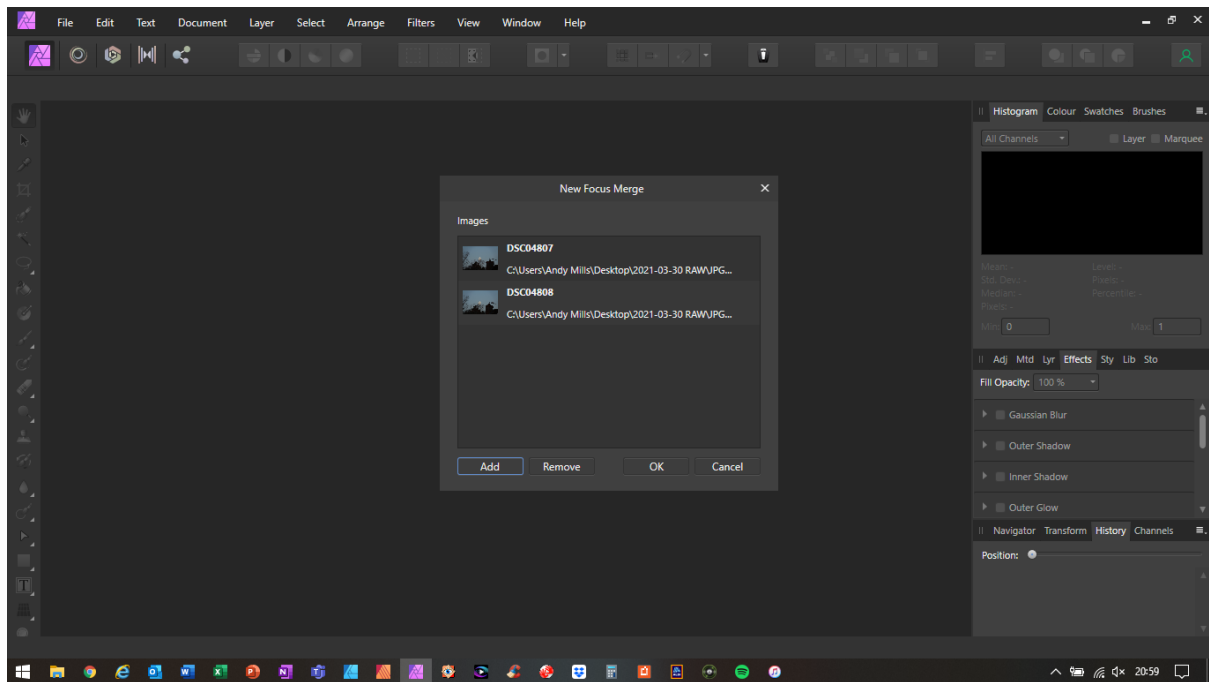
Go to File -> New Focus Merge...



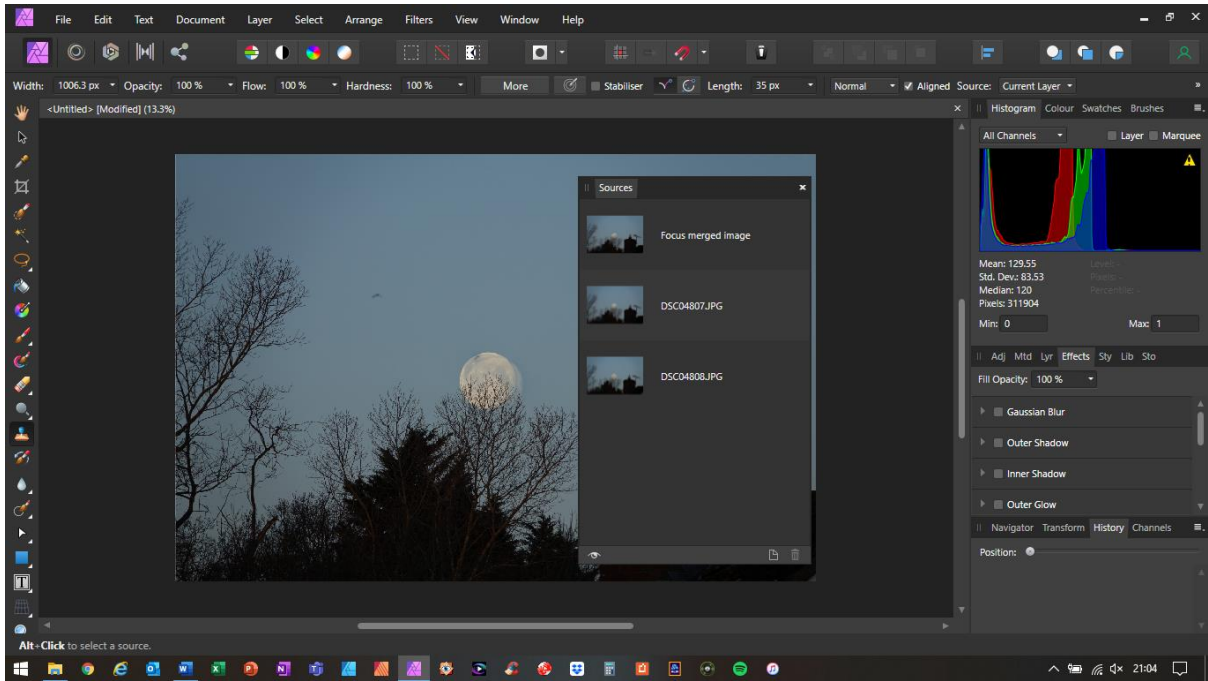
This opens a new control panel to add images into the Focus Merge stack:



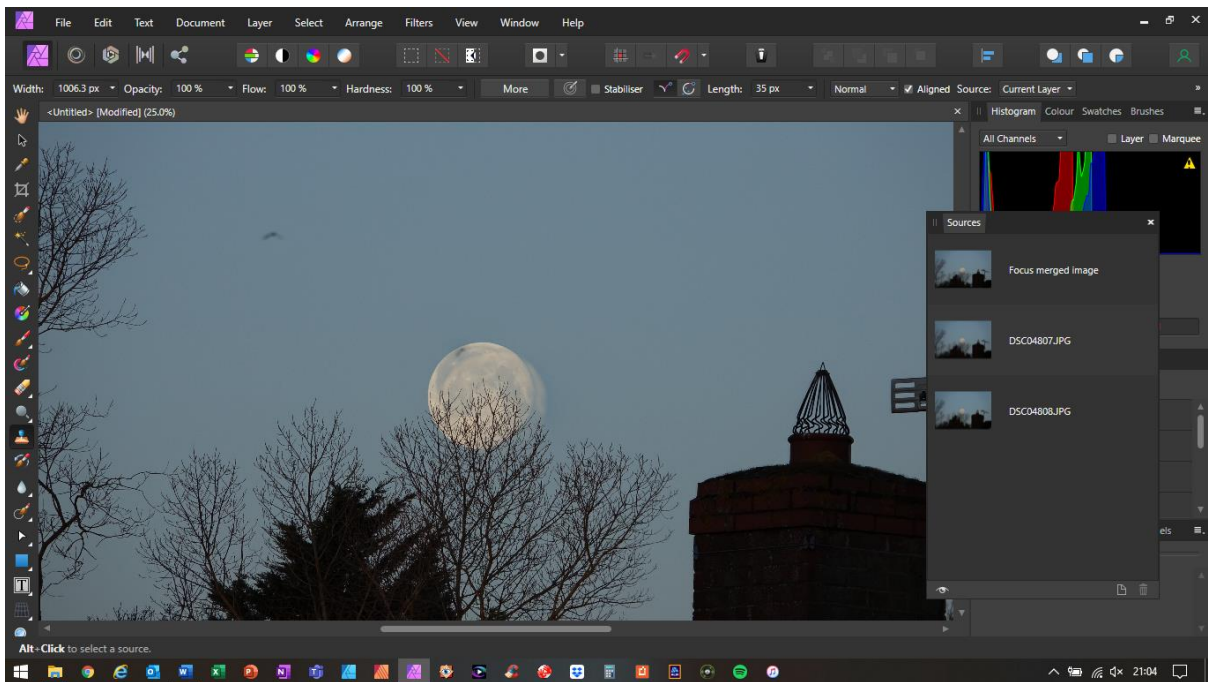
In this example, just two images will be merged:



Then all you need to do is press the OK button. The screen shows each step of the merge process, so sit back and watch it do its magic! When the merge is complete a panel opens which lists the source images plus the merged output image:



In this example the moon couldn't be automatically aligned between images (because the moon is constantly moving!) so a double image is seen on the Focus Merged image. It can be seen more clearly on the following screenshot:

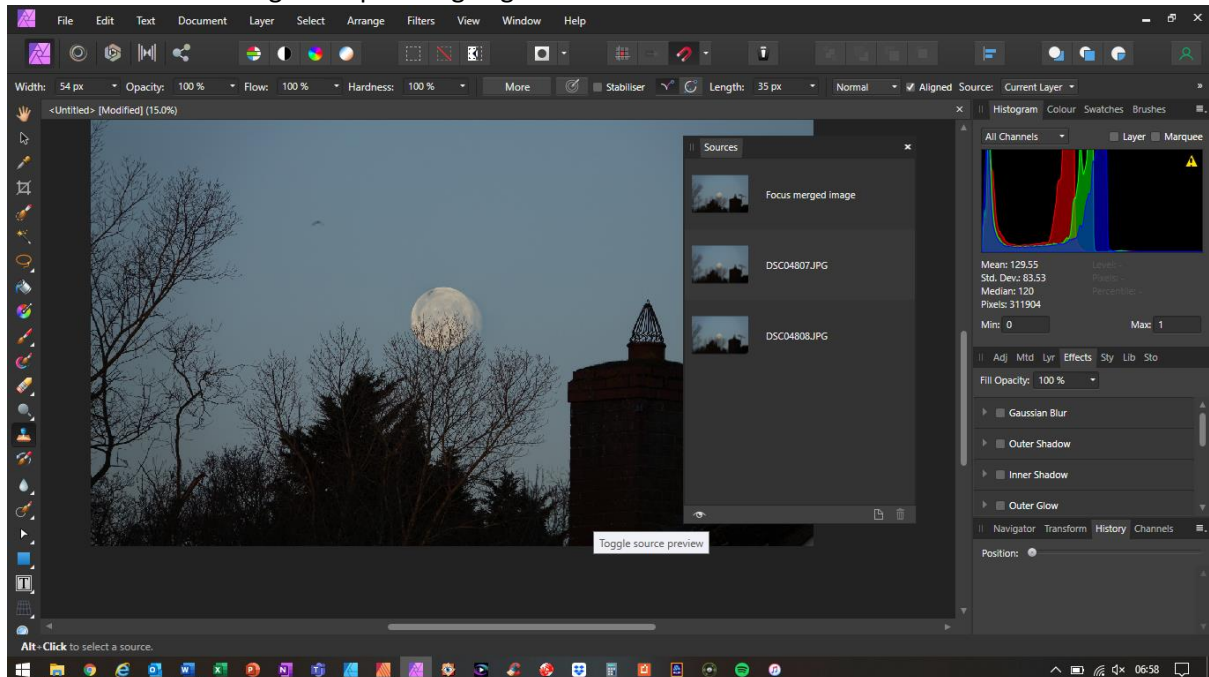


These two source images do not align perfectly so need some manual adjustments to optimise the final merged image. The trees and moon are sharp in one image and the chimney is sharp in the other image so the intent is to combine the sharp trees with the sharp chimney, without having two moons.

When the Focus Merge procedure ends the Clone Tool is automatically enabled (see Tool Bar on the left) so it is ready to use for cloning layers, if needed. In this example it is needed. The main screen is showing the Focus Merged Image with two moons.

To decide which parts from each of the source images to Clone onto the final merged image it is necessary to view the source layers one by one.

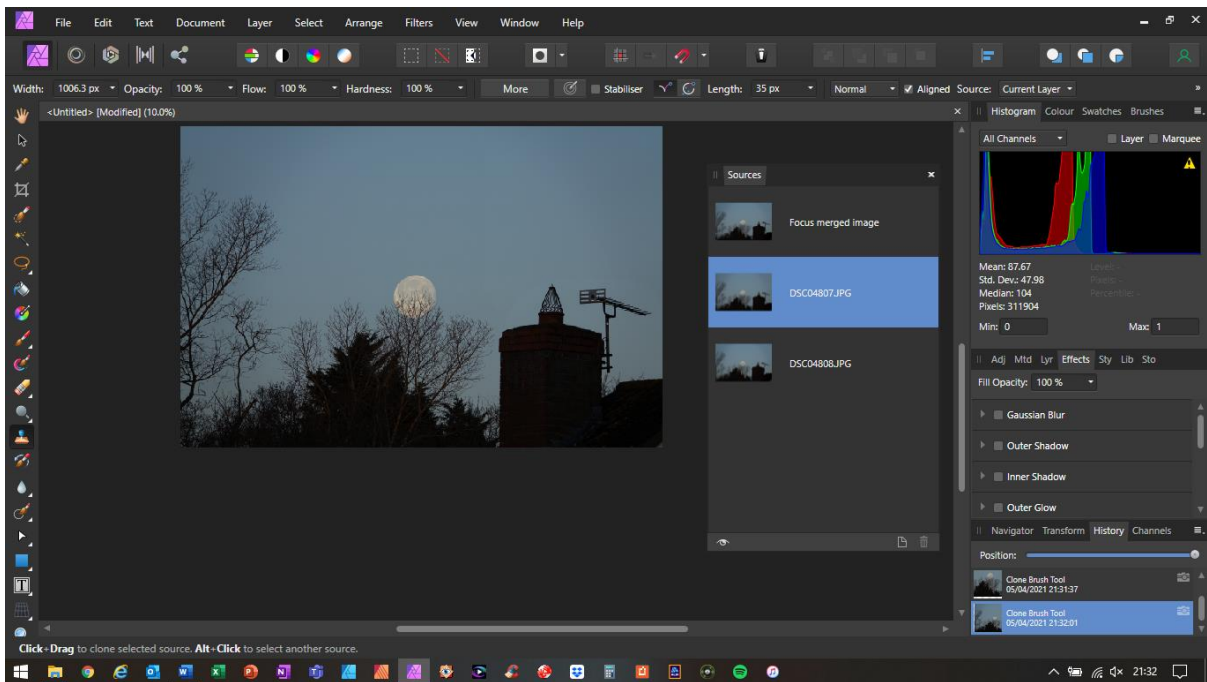
At the bottom of the panel showing the stack of images there is a small icon of an eye. This will toggle the source preview. Click on the eye icon then click on one of the source images. The eye icon allows you to change the view to see the layer that is selected. You can step through all source images to view them whilst the eye icon is selected. If you click on the eye icon again the main screen shows the merged output image again.



So, with the eye icon selected, click on one of the source images and choose which area you want to clone to the merged output image.

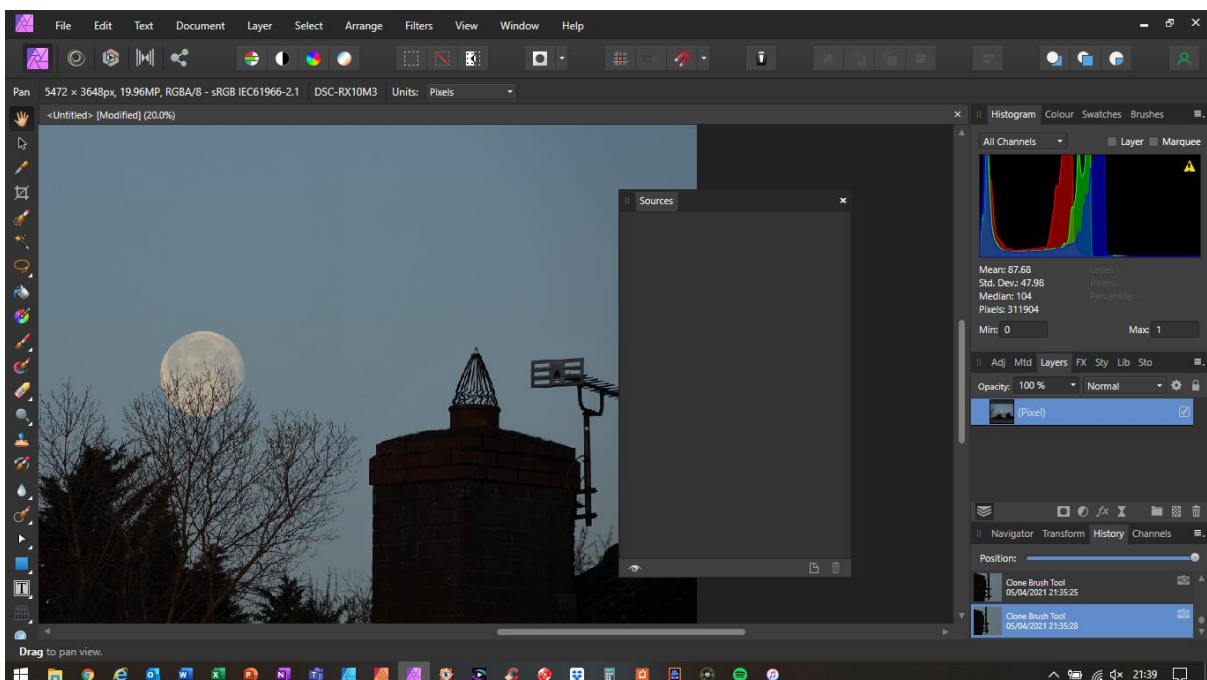
To get sharp edges on the Clone Tool, to allow you to carefully brush to the edge of the required area you need to ensure the Hardness setting in the Command Bar at the top of the screen is set to 100%.

To clone the trees and moon from the source image where they are sharp, simply click on the relevant source image and brush over the trees and moon with the clone tool:



Note: If you click on the eye icon again you will then see the merged image with two moons. You can also zoom out to see all of the Focus Merged Image on the screen whilst you brush with the clone tool. You can also zoom in to inspect the result after you have completed the brushing.

Do any final brushing needed to refine the result. When you are happy with the Focus Merged Image after your manual refinement just click on the Pan Tool (looks like a hand) in the top left of the screen. The Sources panel is then empty, leaving just the merged image on the screen:



If you look at the Layers Panel on the right of the screen you will see there is just one Pixel layer remaining.

You can close the empty Sources panel.

At this point you can export the image to create a JPG or TIFF etc image of the focus merged output.

Note: The focus merged image just created is going to be used in the next example:

Conclusion:

The ability to create images with greater depth of field by merging multiple images with different areas in focus is useful for overcoming practical limitations caused by the lens or limited lighting requiring a wide aperture for example.

Although the example described in this paper only uses two source images, in other cases there could be many source images, typically ten or twenty.

Andy Mills LRPS