

Panoramas

By
Derek Doar

Panoramas

Visualise exactly what you want to capture

It is all too easy to fire off a sweep of images across a chosen vista and hope that they will all stitch together later.

When you look at a scene, it is always a good idea to know the area that you wish to capture and decide where your panorama will **begin** and **end** and also what needs to be captured **top** and **bottom**

Do not try and capture too wide a panorama, as this can sometimes look too un-natural and may lack real overall credibility.

Aim to capture a panorama image with a ratio of about 3:1 which is the norm for panoramic images (sometimes a 4:1 ratio may work.)

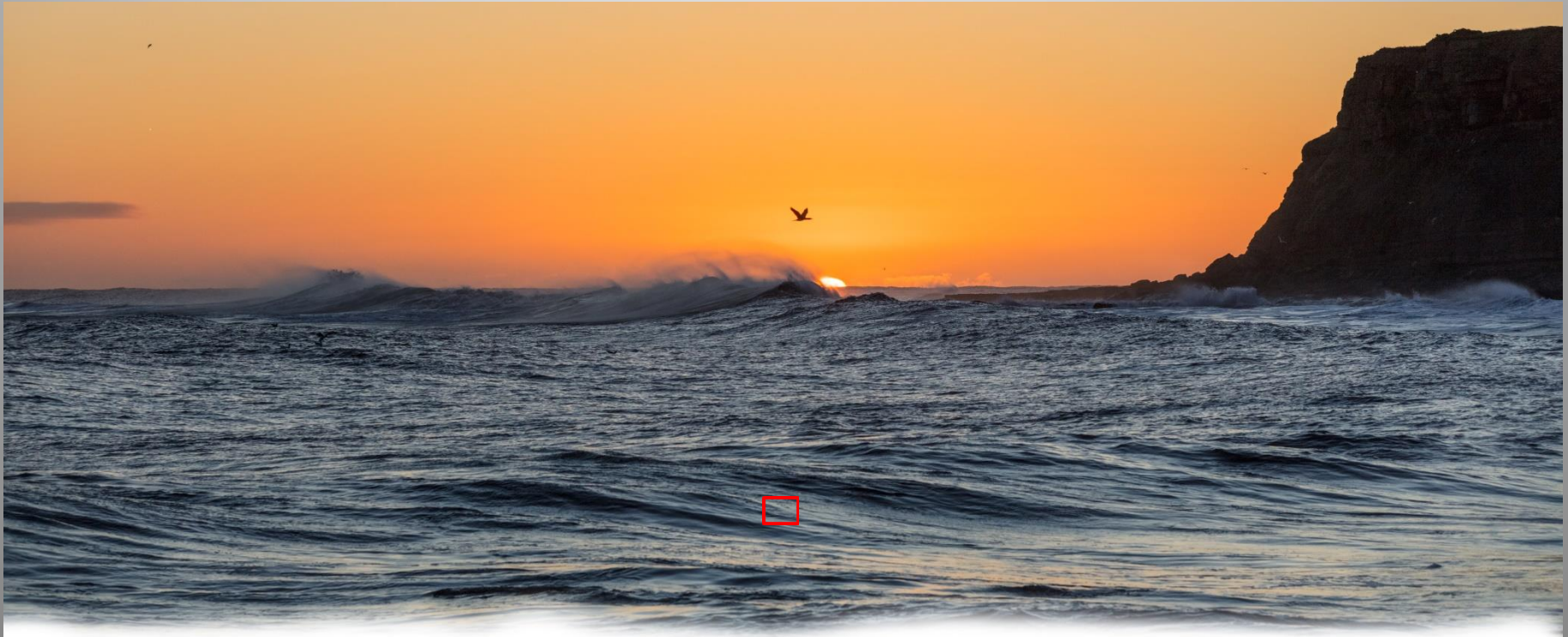
It is a good idea to make yourself a piece of cardboard with a 3 x 1 ratio cut-out in it to help you in the field, to compose your panorama from the scene in front of you.

Panoramas

Method 1. SINGLE IMAGE WAY

(capture a 3x1 ratio panorama on a 3x2 ratio camera)

Frame your intended panorama in the top half of your viewfinder.
If necessary, change to a lens that will allow you to do this.

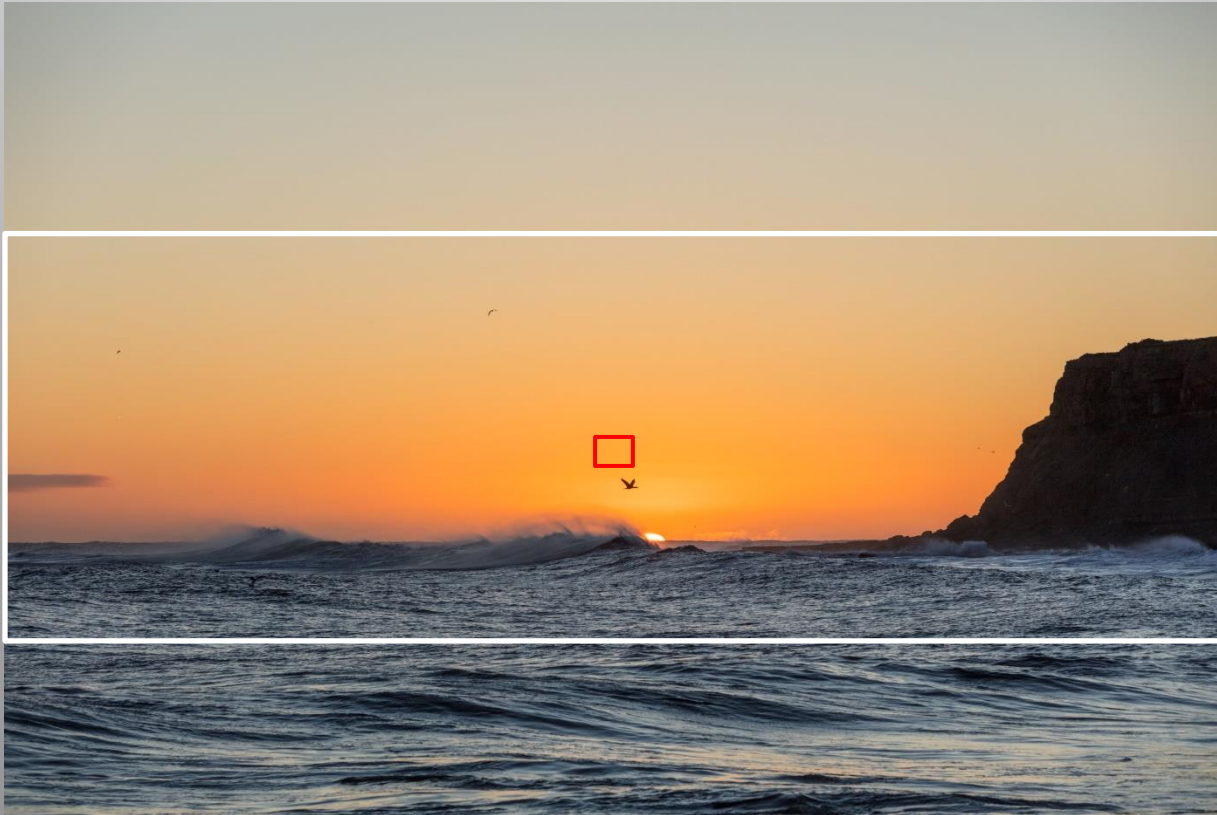


Panoramas

Method 1. SINGLE IMAGE WAY

(capture a 3x1 ratio panorama on a 3x2 ratio camera)

Re-frame your intended panorama in centre of the viewfinder.
This is the sweet spot of your lens and avoids possible soft corners.



Panoramas

Method 1. SINGLE IMAGE WAY

(capture a 3x1 ratio panorama on a 3x2 ratio camera)

Re- position your focusing point to capture your panorama out of the centre.



Panoramas

Method 1. SINGLE IMAGE WAY

(capture a 3x1 ratio panorama on a 3x2 ratio camera)

Finished panorama, cropped out of the centre of the image and processed



Panoramas

Method 2. Multiple images, taken as a set

My Preferred Equipment:



Ball Head
(A solid foundation)



Panning Clamp
(For a smooth pan)



Nodal Slider
(to combat parallax)



L Plate
(For an accurate vertical
Orientation)

I use Really Right Stuff equipment which is the Arca-Swiss type of fitting.

You will need to source items that match your preferred mounting brand.

Panoramas

Method 2. Multiple images, taken as a set

Panning: The camera must be as level as possible when capturing the images.

No-Parallax Point (or Entrance Pupil).

Just as the pupil of your eye is the centre of the world it sees, so it is that the **No-Parallax Point / Entrance Pupil** of the camera lens is the centre of the scene it sees. It is about this point that you want to rotate the camera.

It is important that when panning your scene to capture the set of images that your camera revolves around the No-Parallax Point of your chosen lens. Failure to rotate the camera about this point is very likely to result in visible stitching errors.

Precise positioning of the No-Parallax Point is critical if your subject matter is close, but much less important if you're shooting distant landscape shots.

Panoramas

Method 2. Multiple images, taken as a set

How to find the No-Parallax point or Entrance Pupil of a lens.

Video by Really Right Stuff: <https://www.youtube.com/watch?v=UzWbGM8AU8s>

The No-Parallax Point is best determined by experimentation using a Nodal Slide.

The objective is to slide the camera along its lateral axis until the No-Parallax Point is positioned over the axis of rotation.

- Find two vertical objects; one near, one far. Position your equipment so that these objects line up in the viewfinder.
- Level your equipment.
- Mount and centre your camera on the Nodal slide.
- Start out by positioning the approximate centre of your lens over the axis of rotation.
- Now pan left.
- If the rear object appears to shift to the left, then you are ahead of the No-Parallax Point. Slide the Nodal Slide forward and try again.
- If the rear object appears to shift to the right, you are behind the No-Parallax Point. Slide the Nodal Slide back and try again.
- When the optical centre of the lens is directly over the axis of rotation, the rear object will not appear to move relative to the front object.
- Record your results so that your setup can be re-created.

Panoramas

Method 2. Multiple images, taken as a set (To be stitched together later)

Visualising the area for the panorama:

It helps to examine the area before you set up to take the panorama.

Determine your left and right start points and your upper and lower limits, then add space all around at the taking stage to allow for cropping the stitched image.



Panoramas

Method 2. Multiple images, taken as a set

Exposure: Set your exposure to manual so that it is the same for each captured image in the set.

(Allow for the lightest and darkest part of the panorama in your exposure setting).

Do not use Auto Exposure.

White Balance: Use a manual white balance such as Daylight, Cloudy or a dedicated Kelvin setting such as 5500k

Do not use Auto White balance.

Focusing: Use the same manual focus setting throughout the captured set.

Do not use Auto Focusing.

Aperture: keep a constant aperture such as f11 throughout the captured set. This keeps the depth of field the same for each image in the set.

Important: If you use **Auto Exposure, Auto White balance, Auto Focus or Auto Exposure.** You may be giving yourself problems in stitching your set

Panoramas

Method 2. Multiple images, taken as a set

Overlap of Images: 1/3 to 1/2 overlap is normal but let me show you my method.

Take your first image and note a point on the landscape on the right-hand edge of your image.

Move your centre focusing point to that spot. You have now $\frac{1}{2}$ overlap.

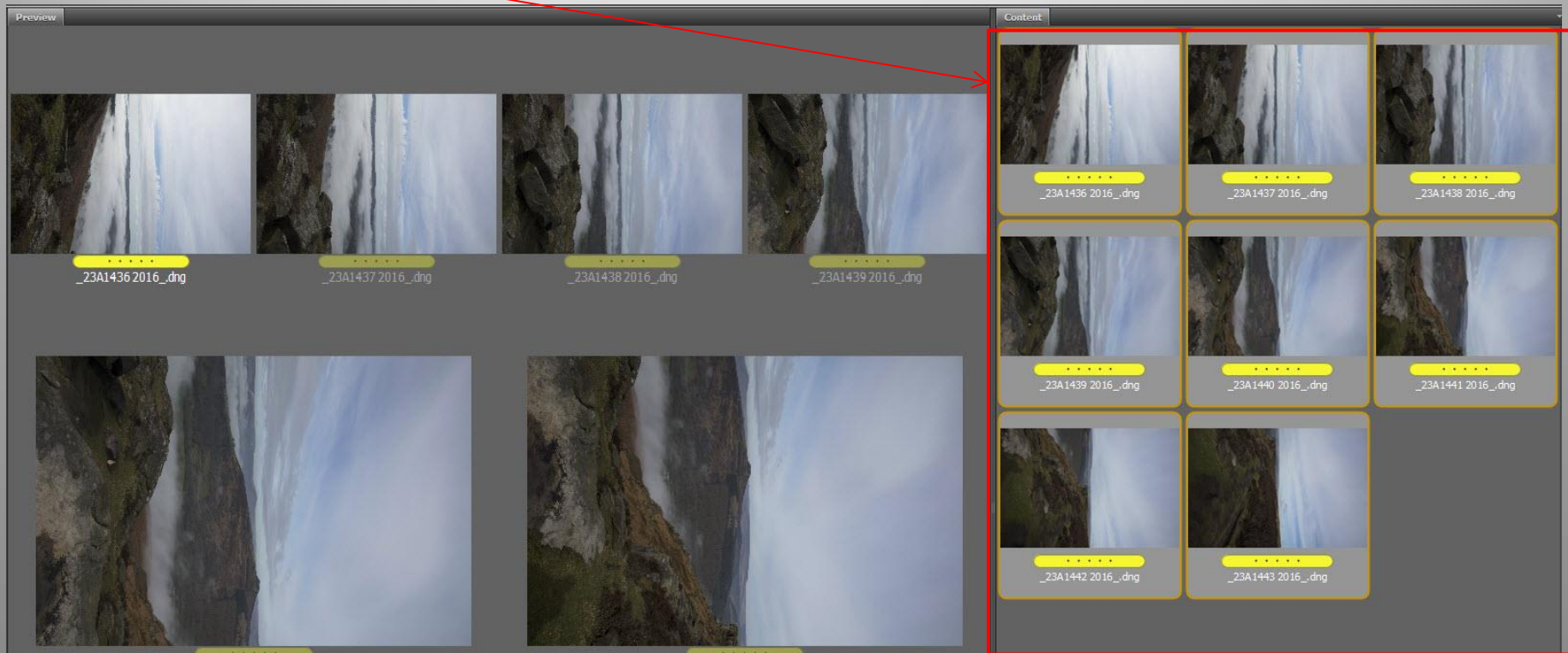


Panoramas

Method 2. Multiple images, taken as a set

Stitching your panorama:

1. select your set in adobe bridge and open them in Adobe Camera raw.



Panoramas

Method 2. Multiple images, taken as a set

2. All eight images are now open in ACR but only the top one is selected.



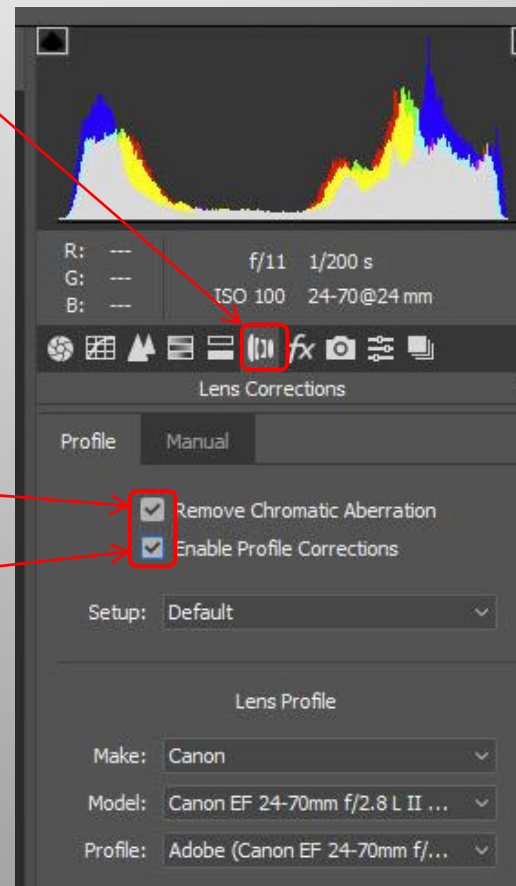
Panoramas

Method 2. Multiple images, taken as a set

3. Select the Lens Selection Icon.

Tick
Remove Chromatic Aberrations
and
Enable Profile Corrections

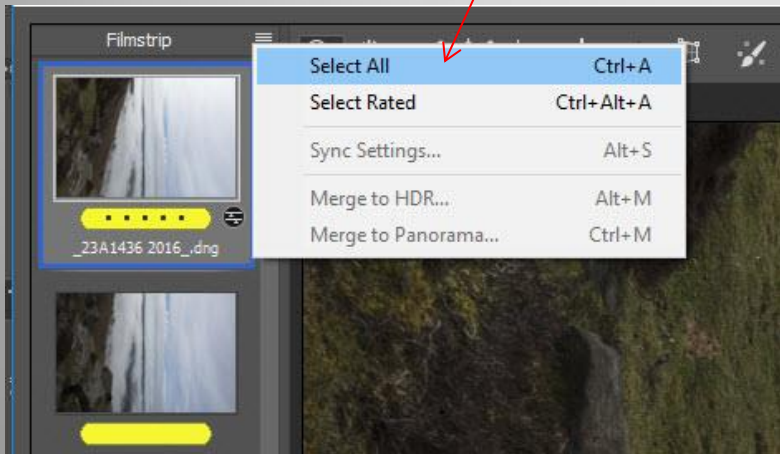
Do not change any other settings



Panoramas

Method 2. Multiple images, taken as a set

4. Now click on Select all.



All the 8 images are now selected.
(Top one in blue and the rest in grey)

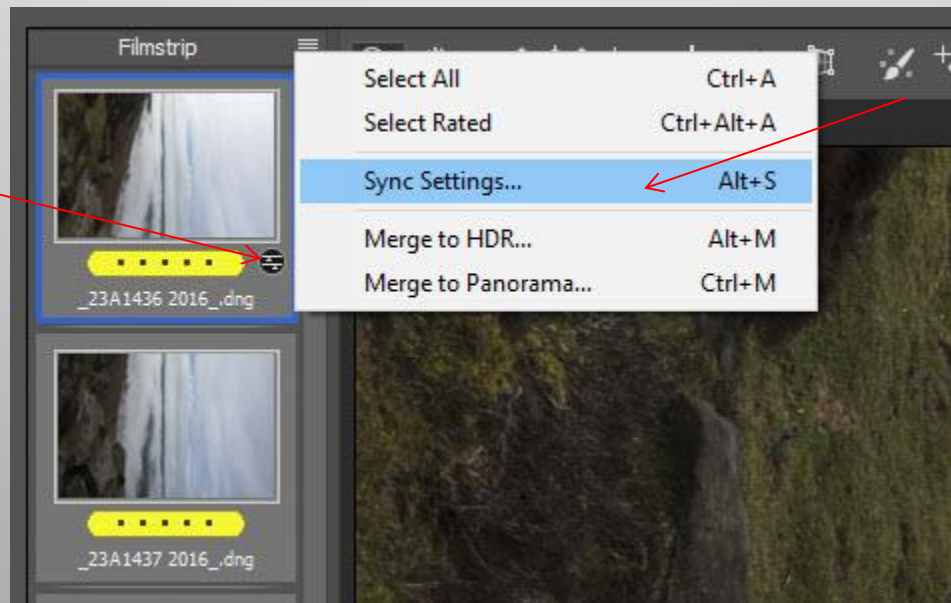


Panoramas

Method 2. Multiple images, taken as a set

5. With the top image active (In Blue) and the rest selected tick Sync Settings

Note: only the top file has applied settings so far



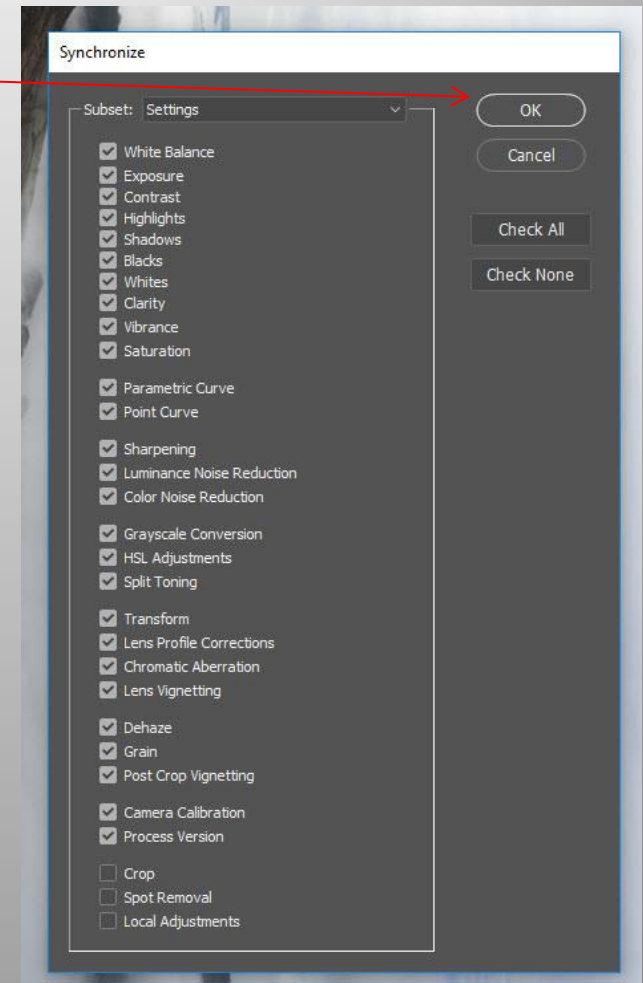
Panoramas

Method 2. Multiple images, taken as a set

6. Do not untick or tick any more boxes

Click **OK**


The **Remove Chromatic Aberrations** and **Enable Profile Corrections** settings will be now Synchronised with the rest of the raw files.



Panoramas

Method 2. Multiple images, taken as a set

7. The **Remove Chromatic Aberrations** and **Enable Profile Corrections** settings have been Synchronised with the rest of the raw files.

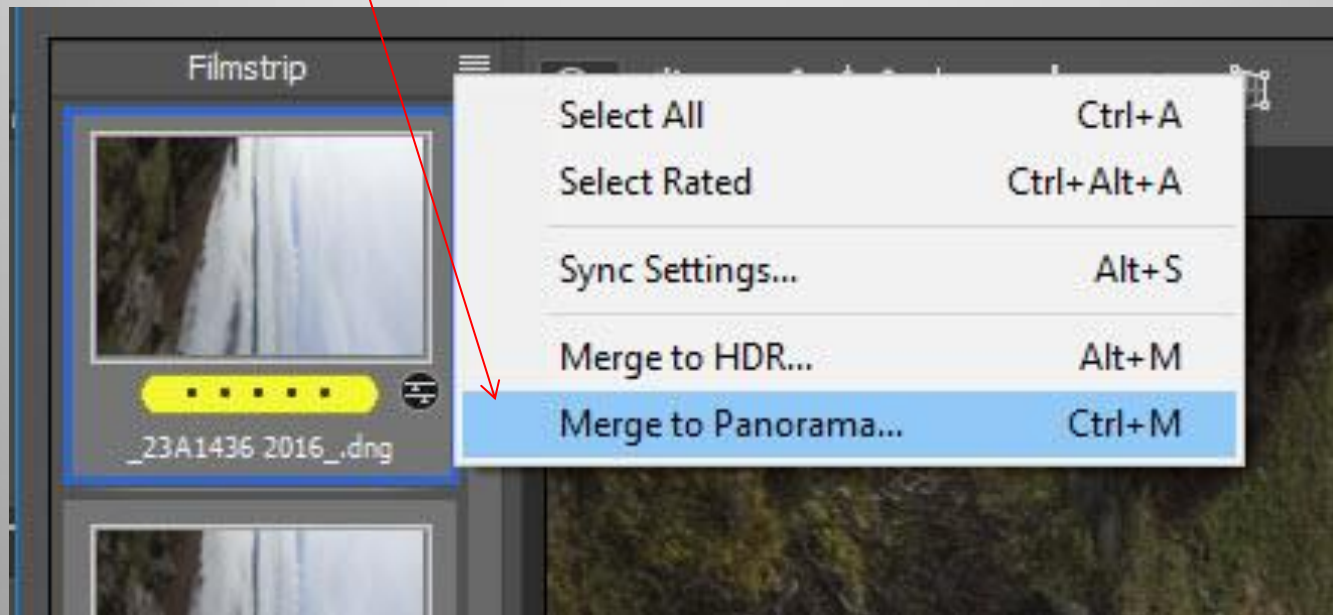
Note: each file now has the same develop settings symbol 



Panoramas

Method 2. Multiple images, taken as a set

8. Now select **Merge to Panorama...**



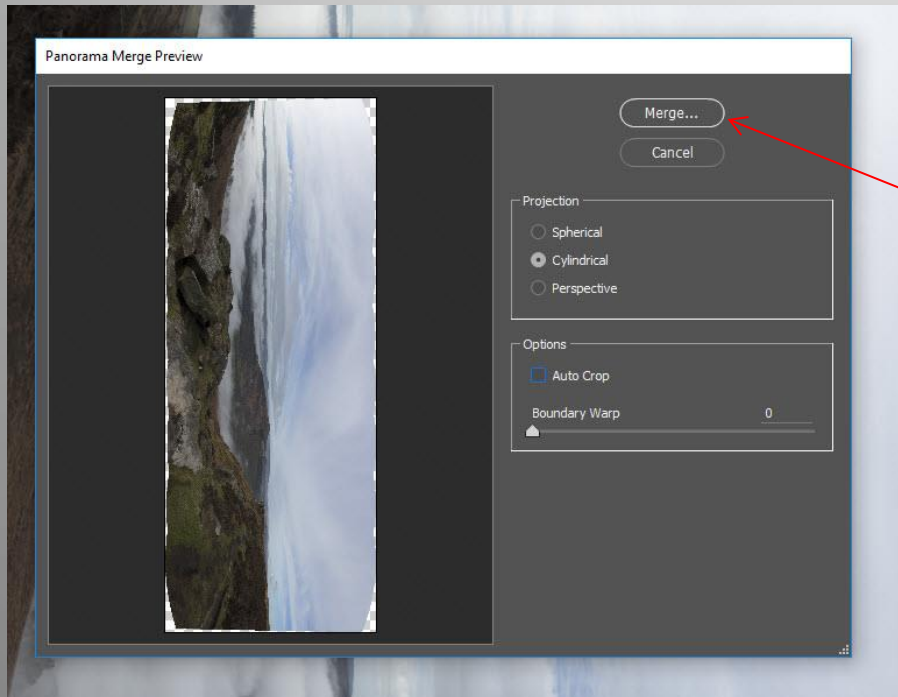
Panoramas

Method 2. Multiple images, taken as a set

9. You will now see a Panorama Merge Preview box.

I prefer to use the Cylindrical setting, but try out each projection type to see what suits your image best

I prefer not to tick the Auto Crop, this way I get the full uncropped image to work with.

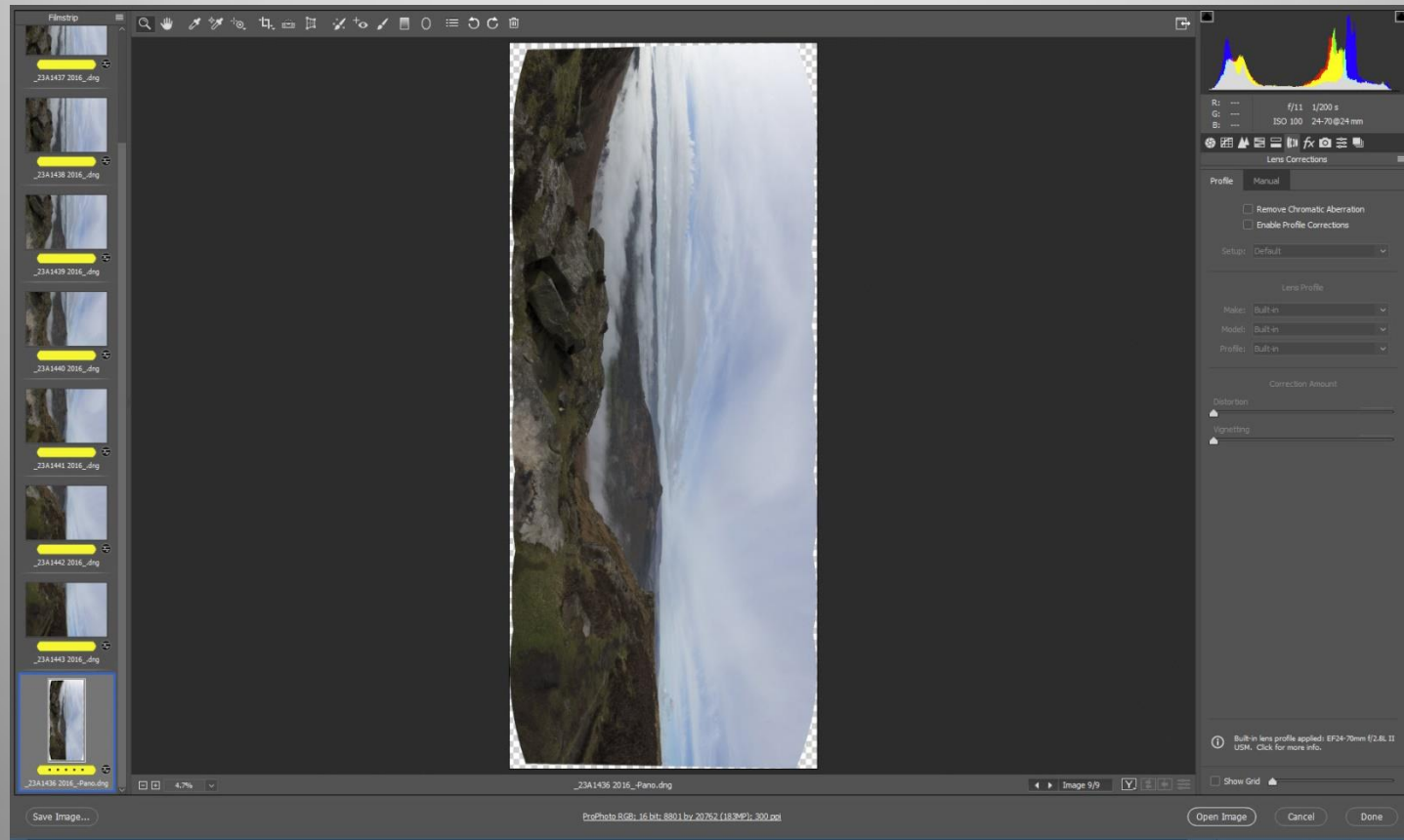


Once you find a setting that you like click on **Alt** and the **Merge..** Button and the stitched Panorama will be saved in the same folder as the original raw files as a new Panoramic Raw file

Panoramas

Method 2. Multiple images, taken as a set

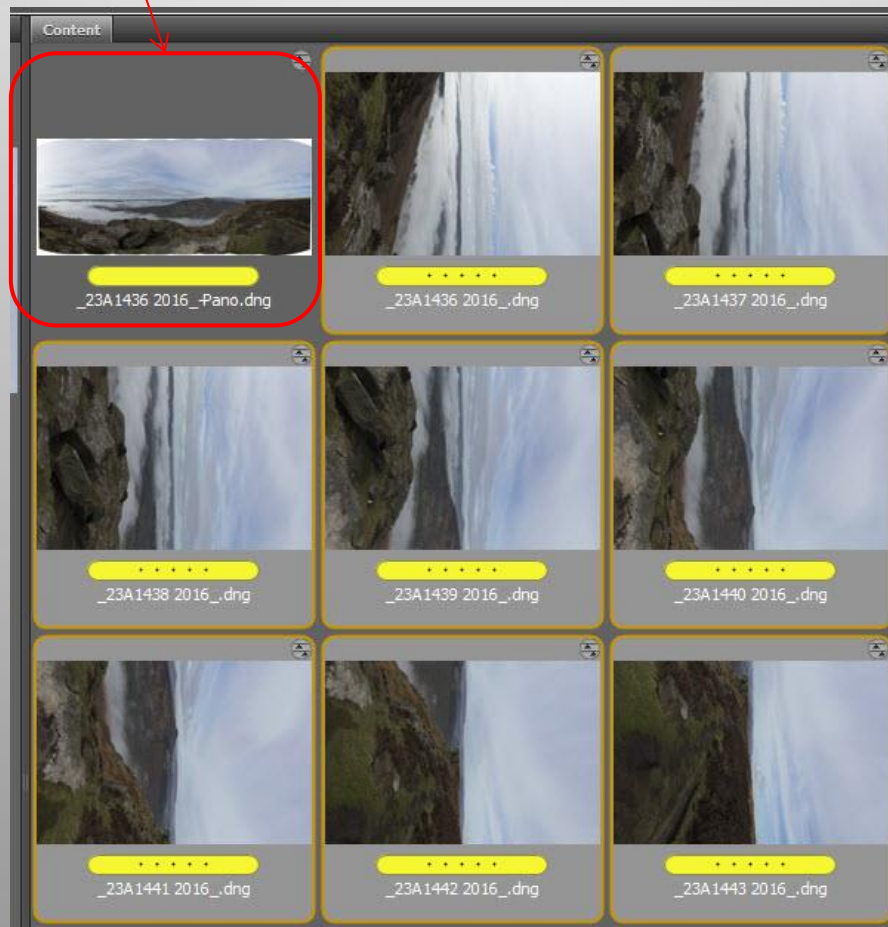
10. Here is your new stitched Panorama in ACR ready for further processing



Panoramas

Method 2. Multiple images, taken as a set

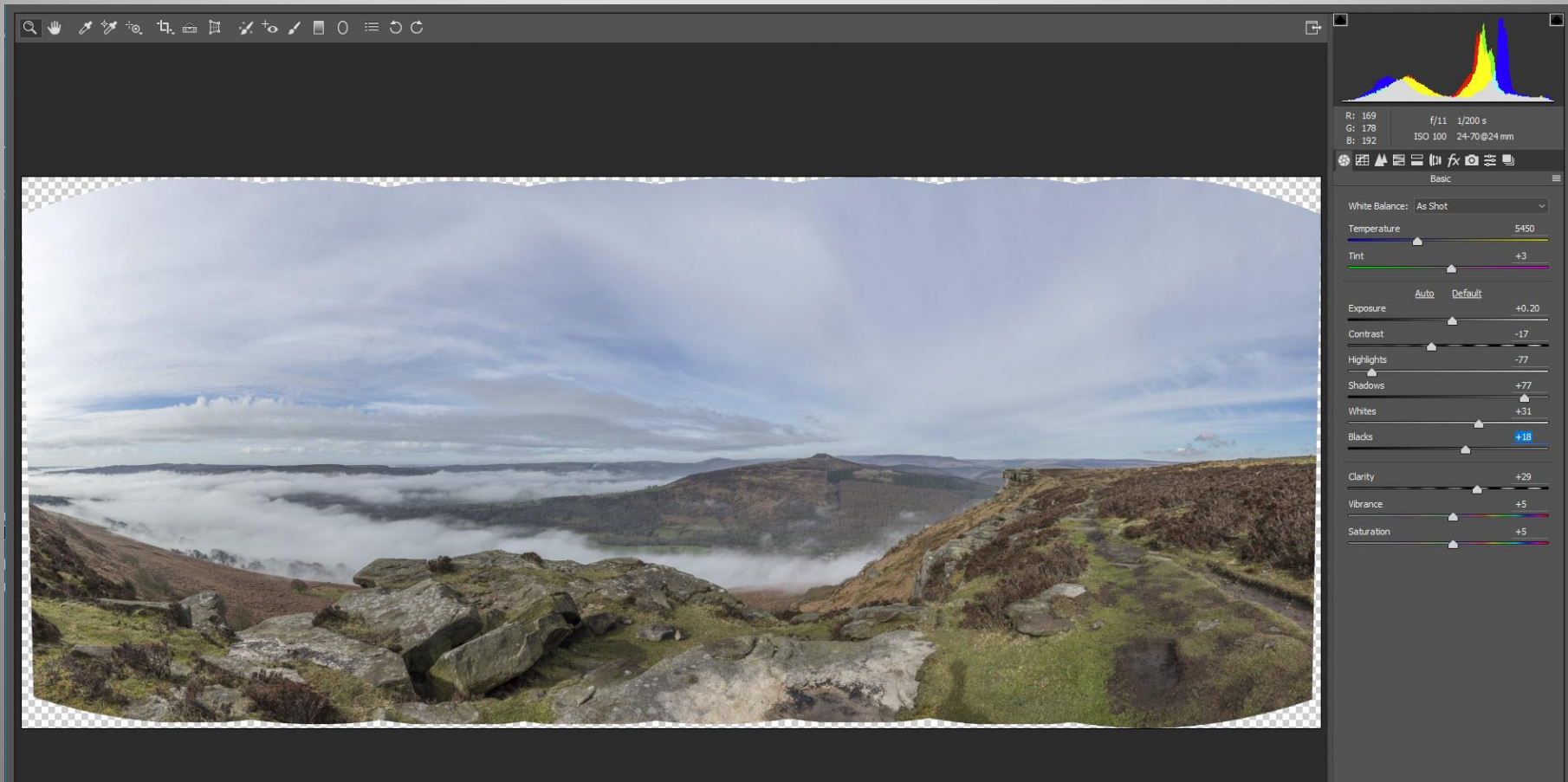
11. Here is your new panoramic Raw File in Adobe bridge along-side your original files



Panoramas

Method 2. Multiple images, taken as a set

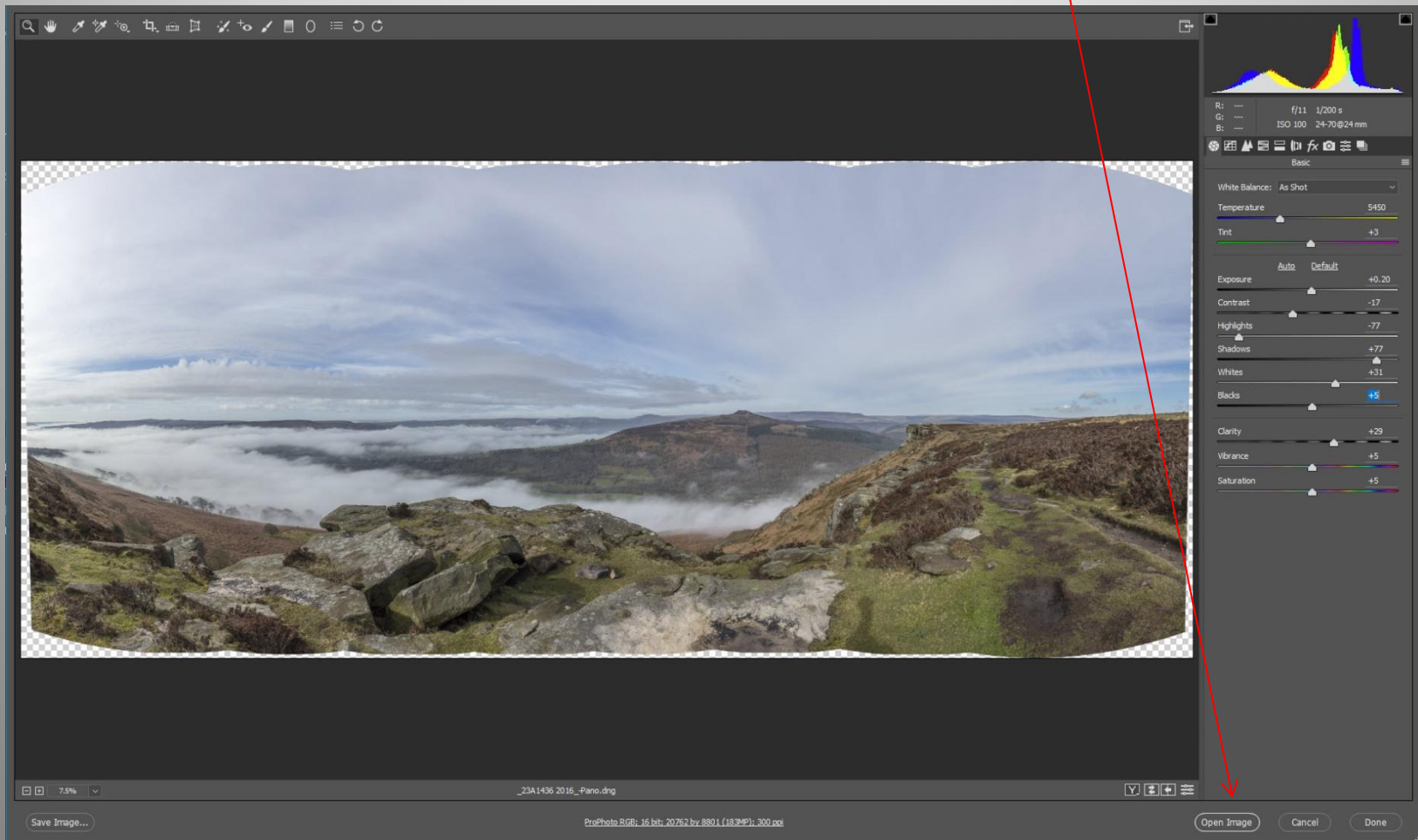
12. Here is the new Panoramic raw file re-opened, rotated and further processed in ACR. But what do we do if we have left it a little tight at the edges to crop and want to gain some of the white areas back?



Panoramas

Method 2. Multiple images, taken as a set

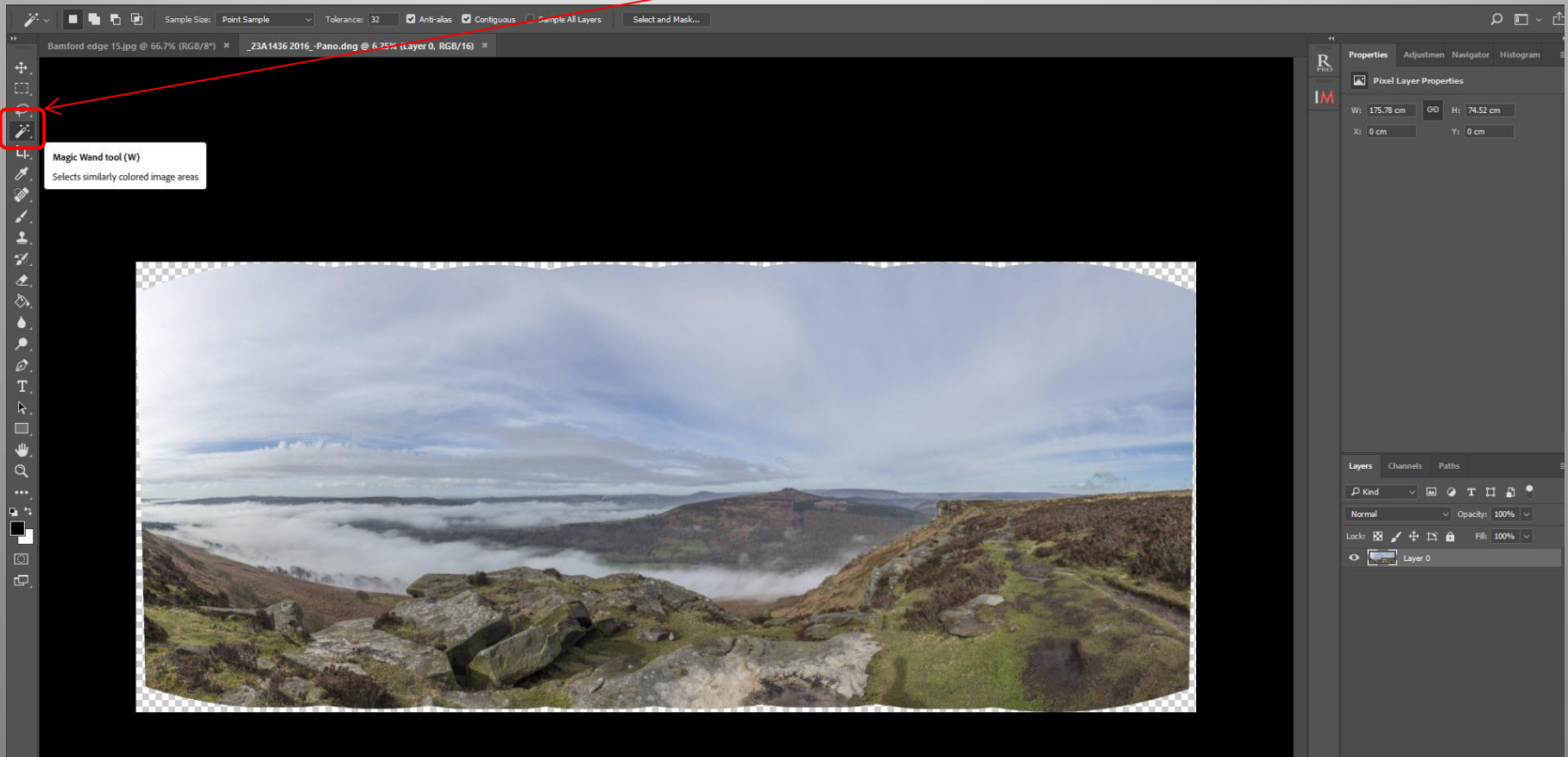
13. Having completed your processing in ACR, click **Open image**



Panoramas

Method 2. Multiple images, taken as a set

14. With the image now open in Photoshop, select the magic wand tool.



Panoramas

Method 2. Multiple images, taken as a set

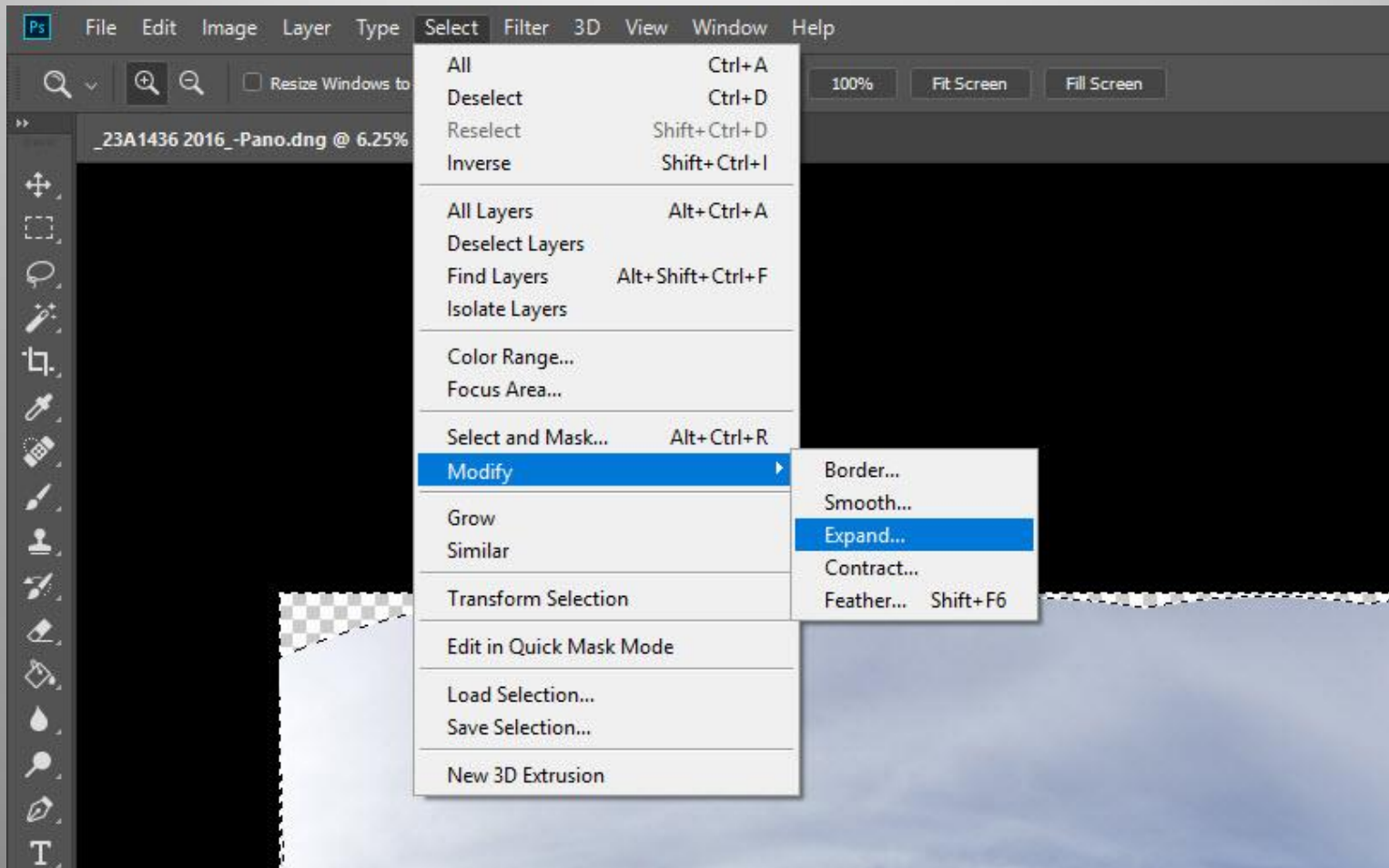
15. With the magic wand tool selected, click any of the white areas that you wish to fill. If all the white does not select, hold down the shift key and this will enable you to add more white areas until they are all selected as below surrounded by marching ants. **The aim is to use the Content Aware tool to fill these areas.**



Panoramas

Method 2. Multiple images, taken as a set

16. With marching ants surrounding our selection go to **Select / Modify / Expand**



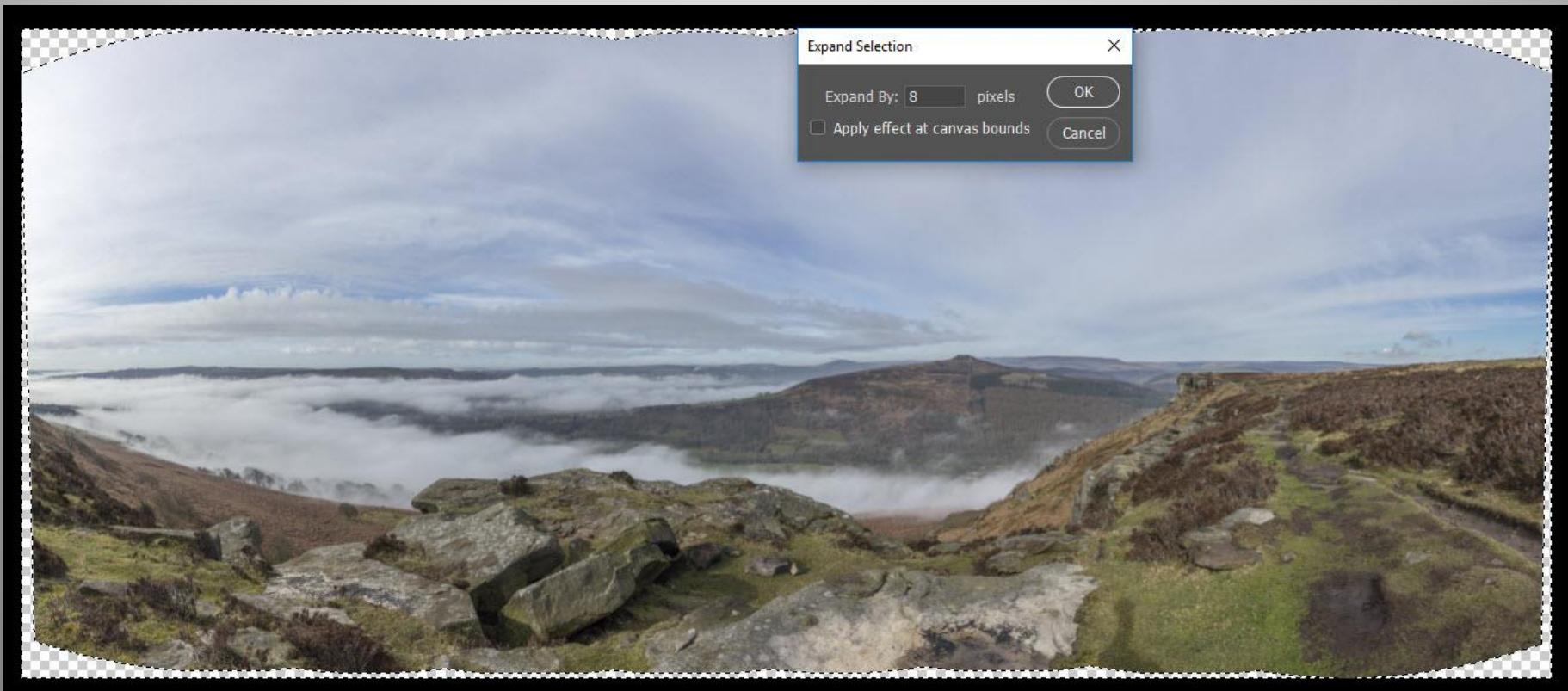
Panoramas

Method 2. Multiple images, taken as a set

17. You will now see the Expand Selection dialogue box.

I normally use **Expand By: 8 pixels** and leave the apply effect at canvas bounds unticked.

Then click OK



Panoramas

Method 2. Multiple images, taken as a set

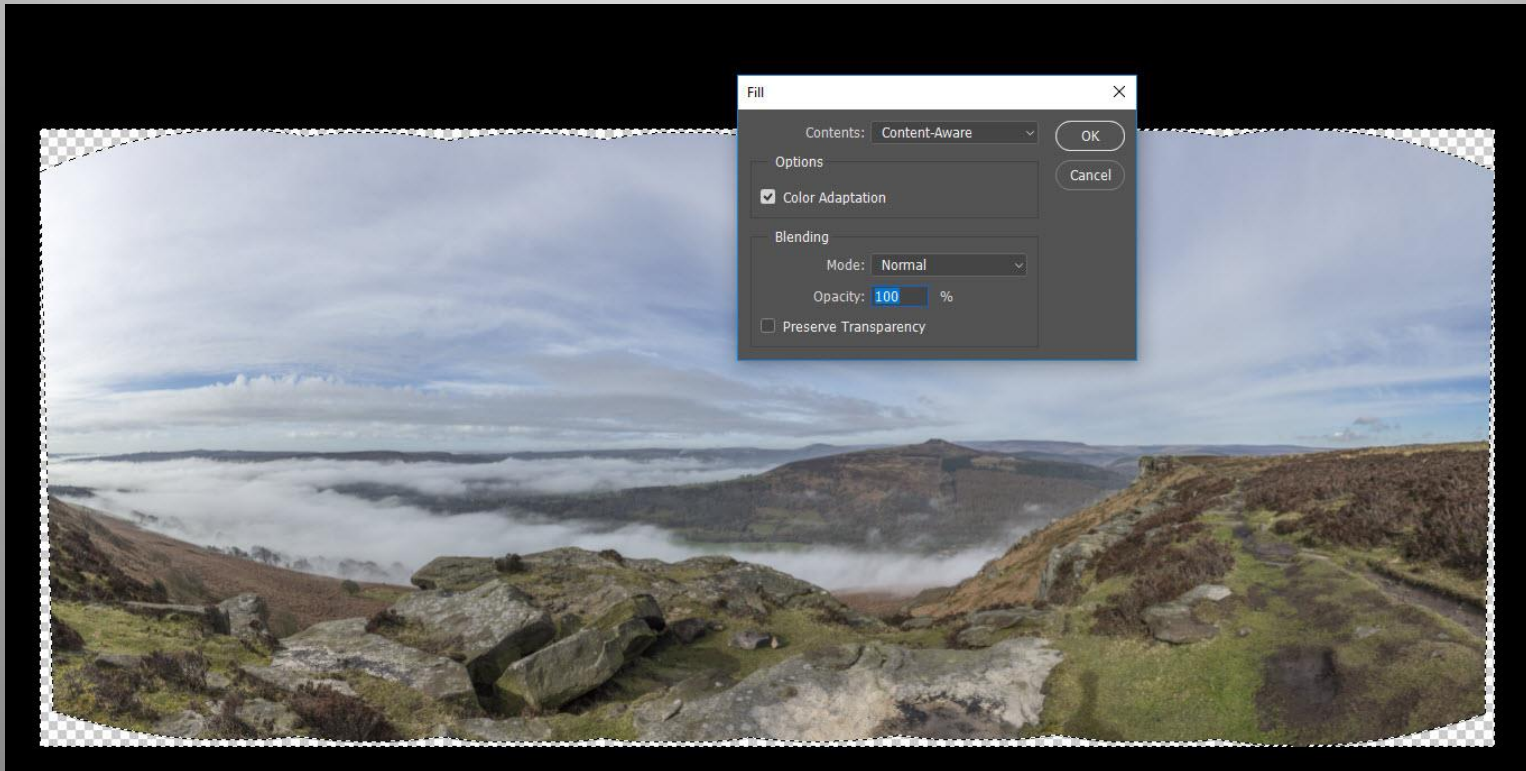
18. Select **Content aware** for Contents

Tick **Color Adaptation**

Blending Mode: **Normal**

Opacity **100%**

Untick **Preserve Transparency**



Panoramas

Method 2. Multiple images, taken as a set

19. The Content aware tool has now filled in the white areas.

The content aware fill does not always get it right and you may have to modify some areas of fill.



Panoramas

Method 2. Multiple images, taken as a set

20. Here is the finished panorama.

Important note: This file exceeded 2Gb after processing.

The Maximum file size for a Photoshop .psd file is 2Gb, so If the file size exceeds 2Gb it has to be saved as a Photoshop **.psb Large Format file**.



Baslow Edge in The Derbyshire Peak District

Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

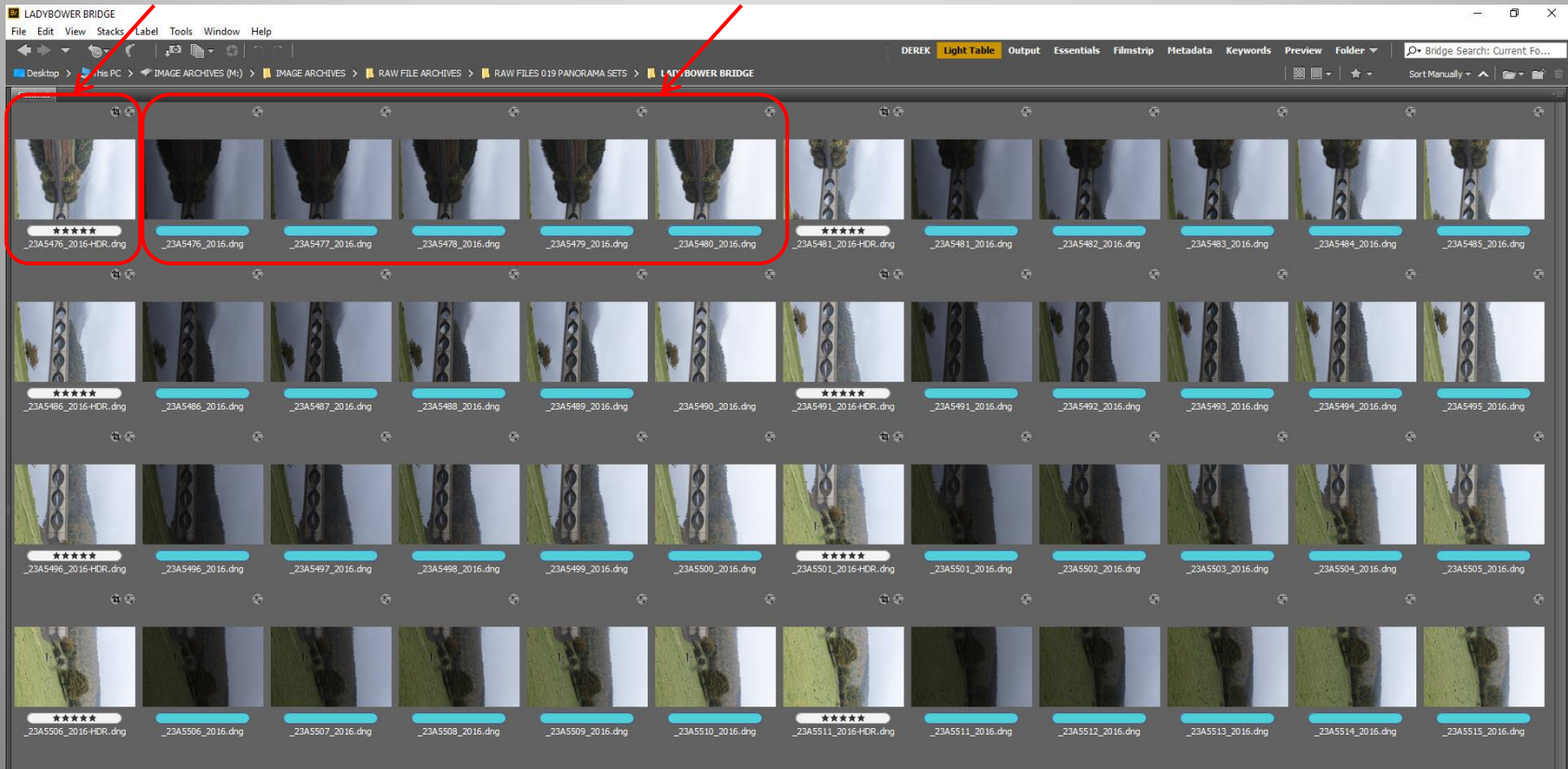
21. An Alternative way (Straight From Adobe Bridge).

Here is a set of files used to create an HDR Panorama.

The files in white are 8 new HDR Raw files that I will use to create the panorama

New Raw HDR File

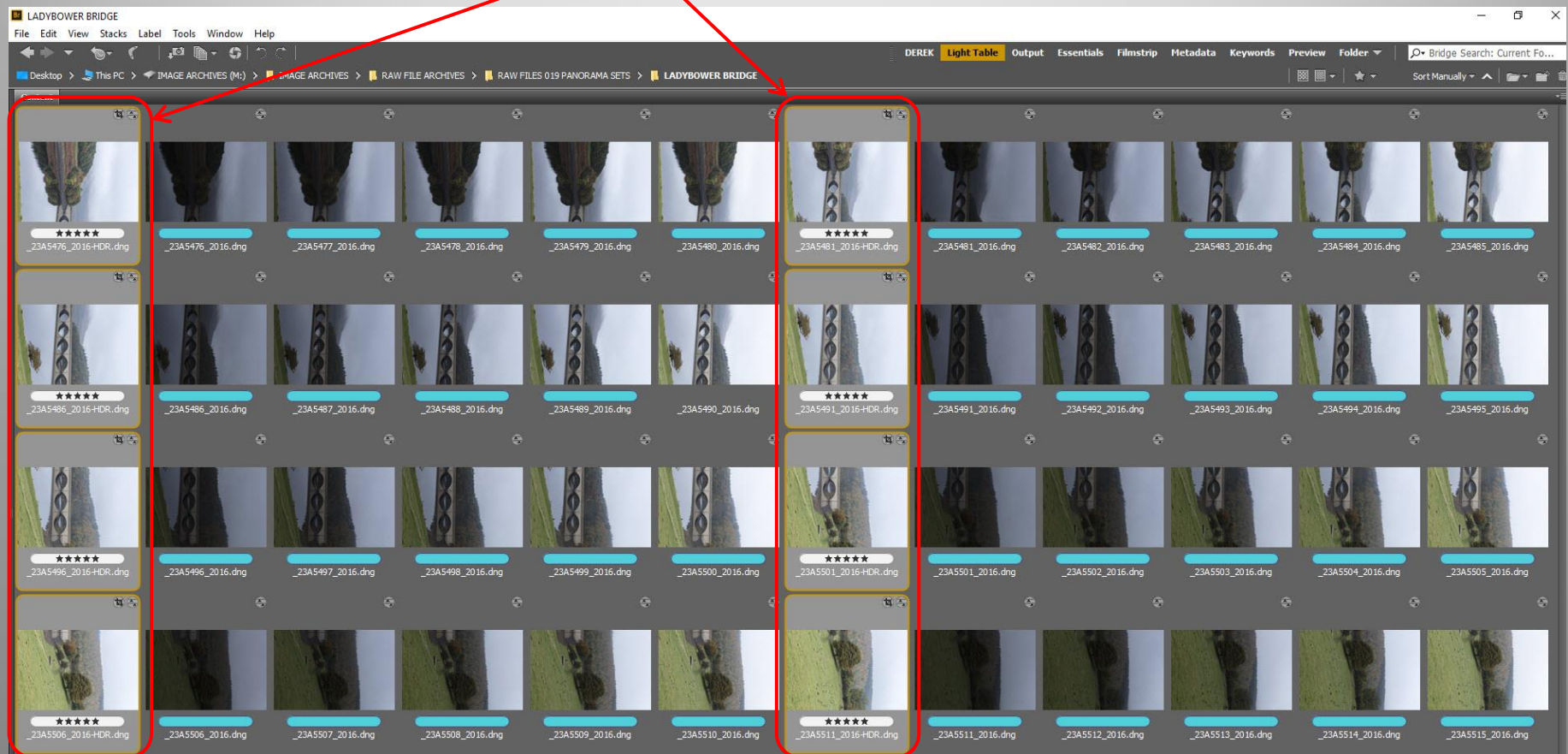
Original 5 files used to make the New Raw HDR File



Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

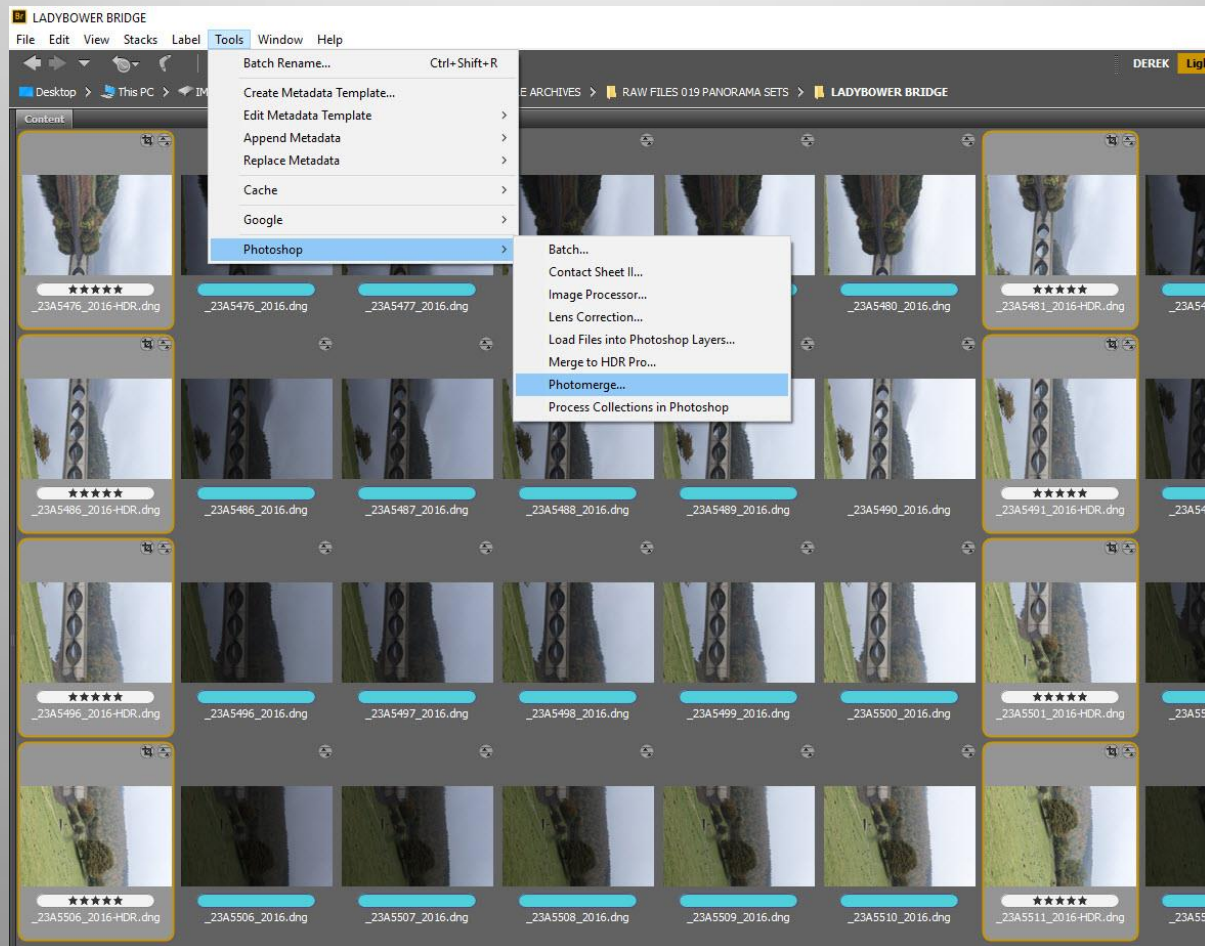
22. Below I have selected the 8 Raw files in Adobe Bridge.



Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

23. In Adobe Bridge, select **Tools / Photoshop / Photomerge...**



Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

24. Here are your selected **Files**

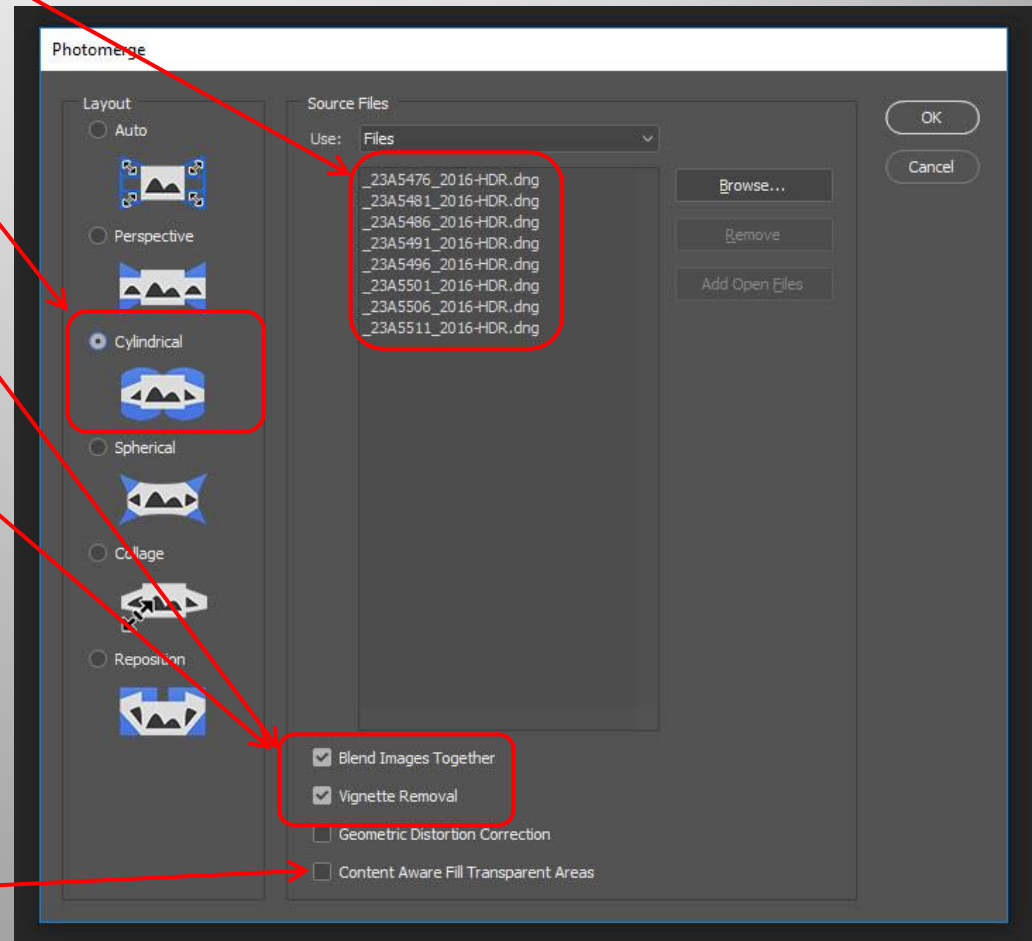
Under layout select **Cylindrical**

Tick **Blend images Together**

Tick **Vignette Removal**

Then click on **OK**

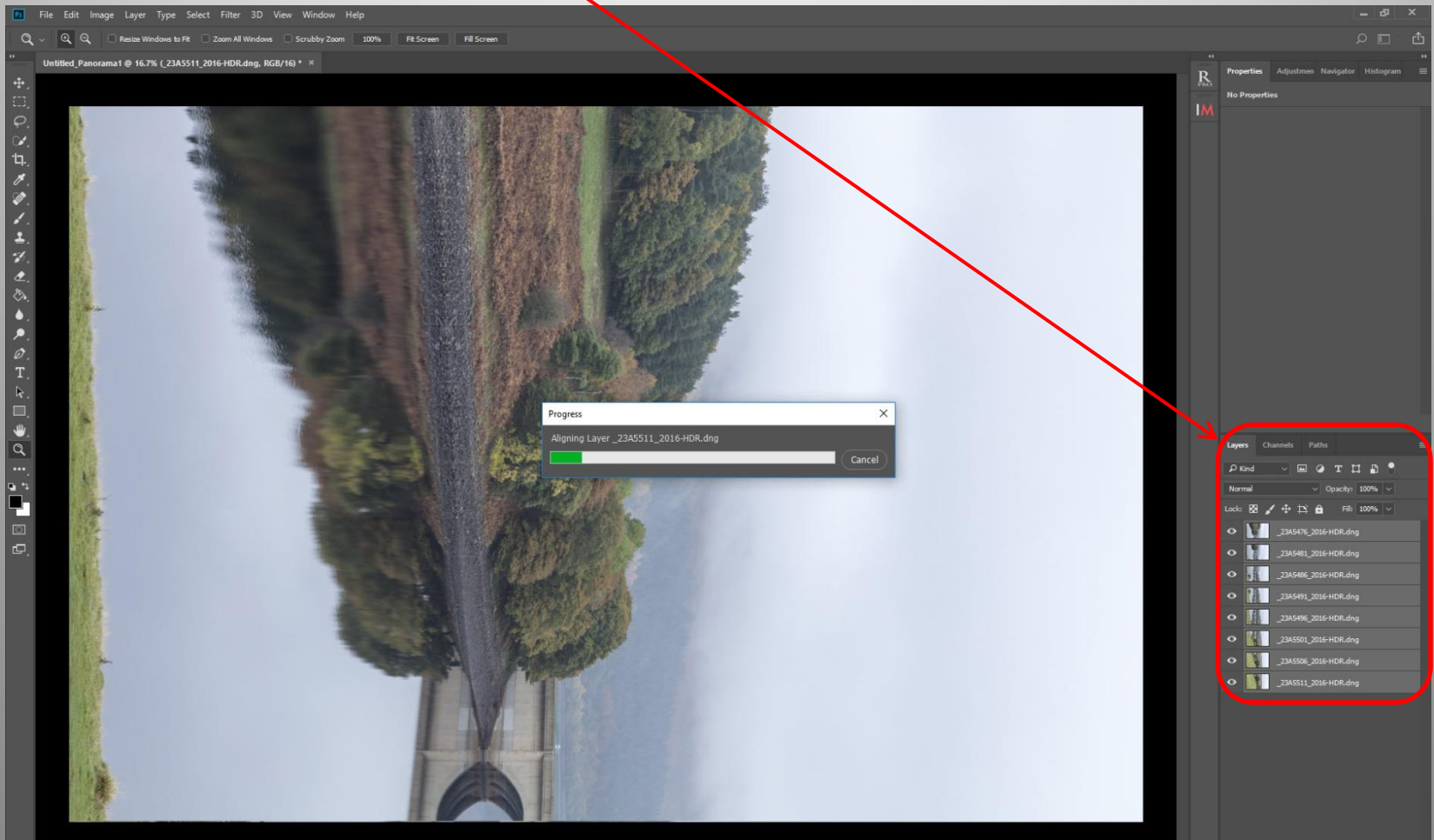
Note: If your finished result has transparent areas that you would preferred filled, you could carry out the Photomerge again, but next time select **Content Aware Fill Transparent Areas**



Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

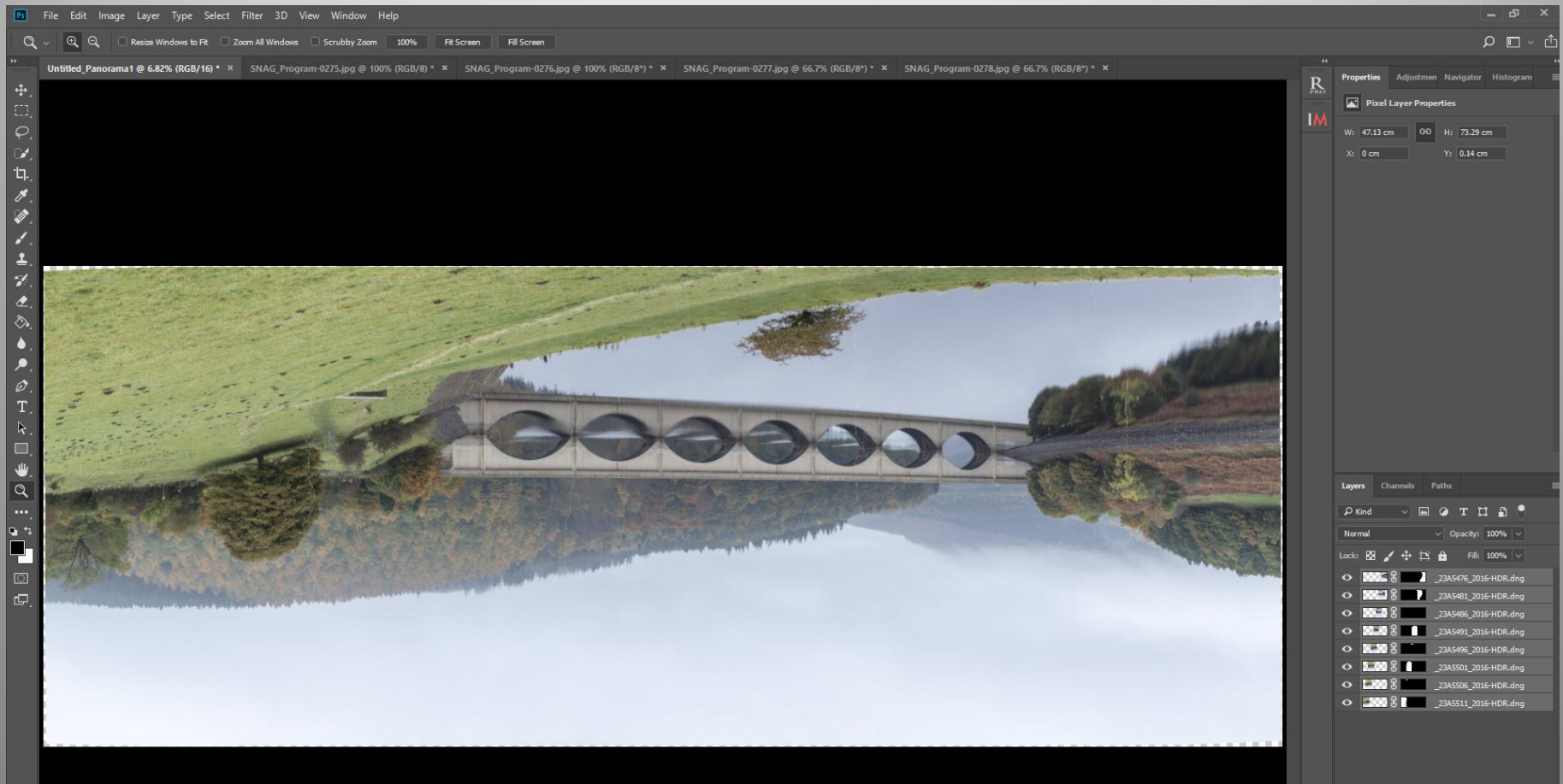
25. Photoshop is now aligning layers



Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

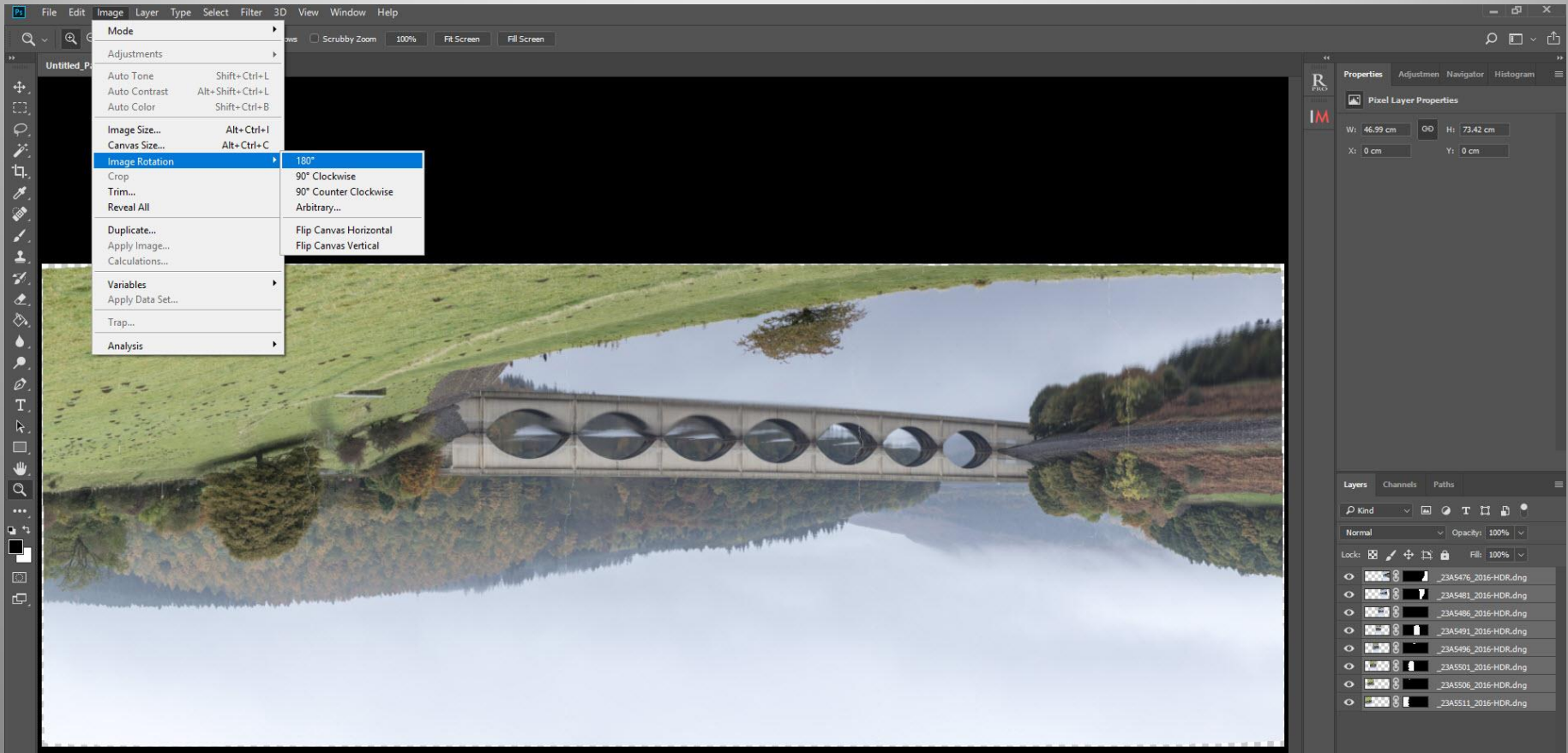
26. Stitching complete in Photoshop but image upside down.



Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

26. To turn the image the correct way up select **image / Image rotation / 180°**



Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

27. The Image now turned the correct way.

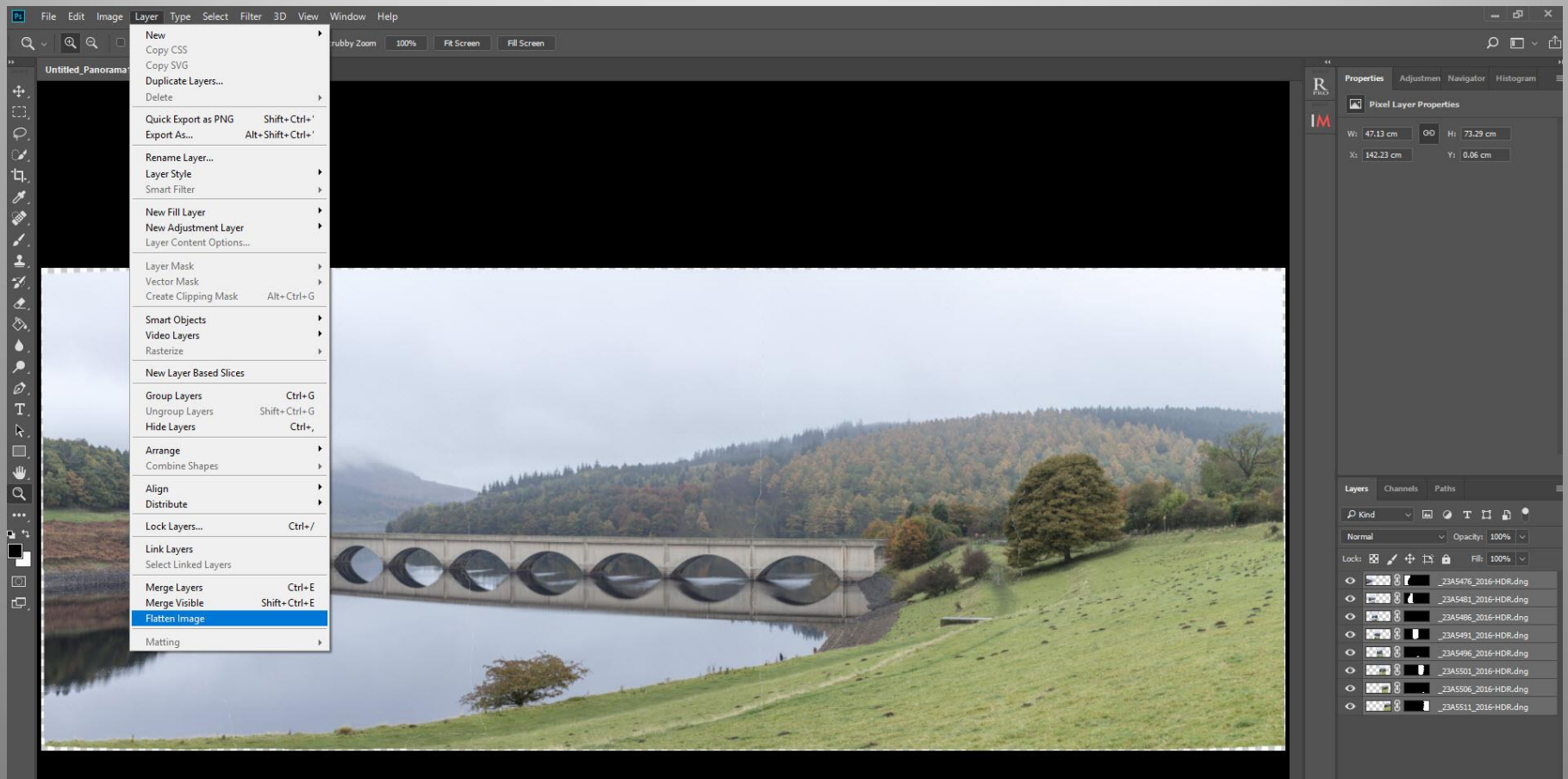
Note that there is not much transparent area which means that the camera was very level when the set of images were taken.



Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

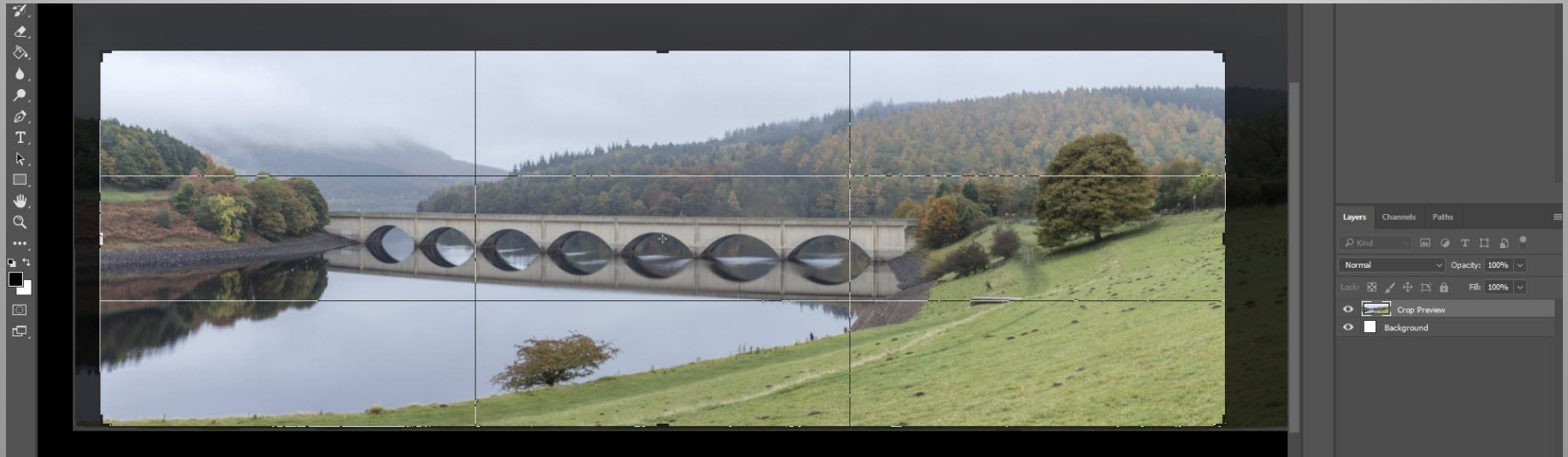
28. If we are happy with the stitch, we can now flatten the layers into one by selecting **Layer / Flatten image**



Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

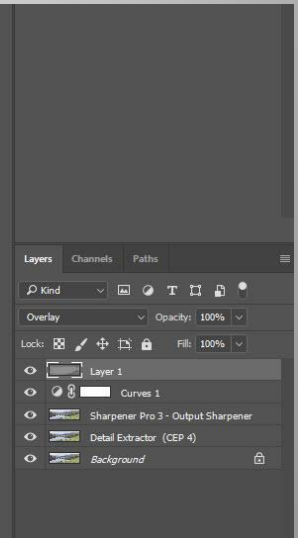
29. We can now crop the image to our desired size and area.



Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

30. We can now further process the image in Photoshop as required.



Panoramas

Method 3. Multiple images, taken as a set (Using Adobe Bridge)

31. Here is the Final 3 x 1 HDR Panoramic image.



Panoramas

The End

Any Questions