

PATCH A SELECTED VIEW IN A SPHERICAL PANORAMA USING PTGUI

This tutorial shows how to extract an arbitrary rectilinear view from a 360x180 equirectangular panorama image for editing in Photoshop and then merge it back into its original location. This is a simple and quick process, but I will give detailed instructions for those who may be unfamiliar with PTGui's advanced features, so it may look much more complicated than it actually is. Templates can help to speed things up a lot and are discussed at the end.

Load the panorama and select the view

1. Open PTGui and load in your 360x180 equirectangular image file.



2. Select **Advanced** mode and go to the **Lens Settings** tab.
3. Set the **Lens Type** to Equirectangular, and **Horizontal FoV** to 360 (PTGui may have set these values).
4. In the **Use individual lens parameters** list, check all 4 boxes for image 0.

Project Assistant Source Images Lens Settings Panorama Settings Crop Mask Image Parameters

Enter the parameters of your lens. PTGui only needs the lens type and focal length; the other parameters will be calculated.

Lens type: Equirectangular panorama

Horizontal Field of View: 360 * (actual) theoretical: 360 * (as found in EXIF)

Lens correction parameters: Image shift: Image shear:

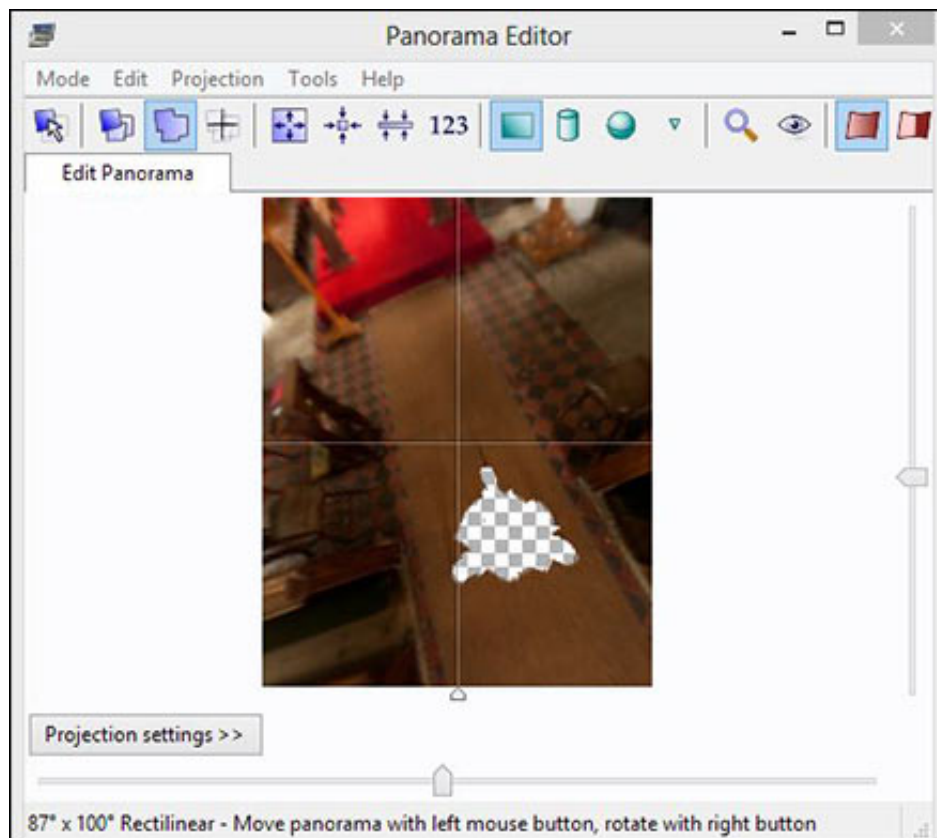
a: 0 hor. (d): 0 pixels hor. (g): 0
b: 0 vert (e): 0 pixels vert (t): 0
c: 0

Use individual parameters for:

	Lens	Shift	Shear	Crop
Image 0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

5. Go to the **Panorama Editor** window. Select **Rectilinear** projection.
6. Drag the image and adjust the fov sliders to select the view you want to edit.

Alternatively, if you just want the nadir: Select the **Numerical Transform** tool (**123** icon) and apply a pitch adjustment of -90



7. Make a note of the horizontal FOV value at the bottom of the window (87 in this example).

Generate the output file for editing

1. Go to the **Create Panorama** tab.
2. Click on **Set Optimum Size** and select **Maximum Size**.
3. Select **File Format** as TIFF.
4. Enter a name for the file to be created.
5. Select **Interpolator**: Bicubic Normal
6. Click **Create Panorama**.
7. **Do not close PTGui**. Just leave it as it is.

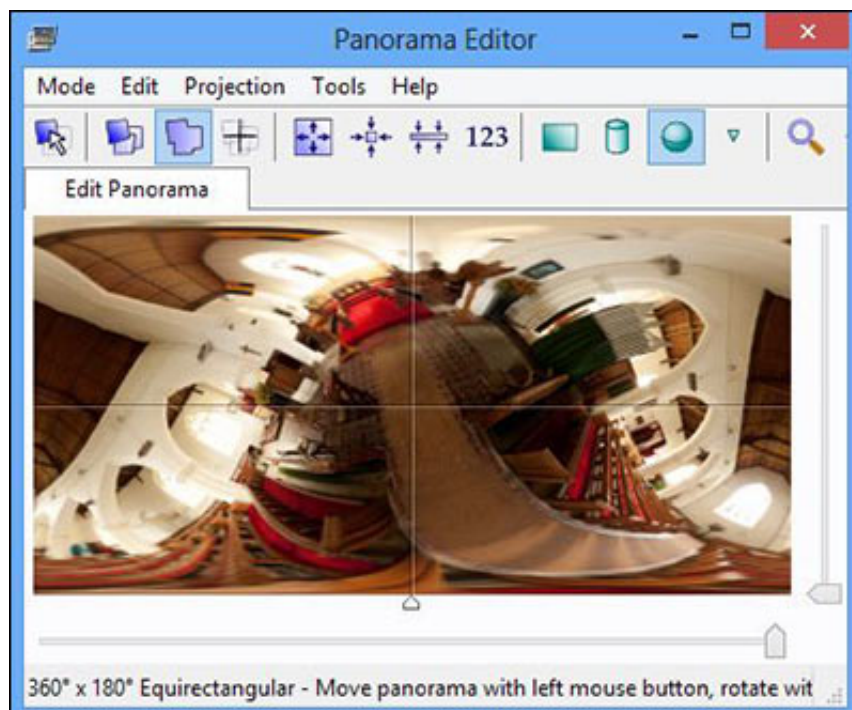
Edit the extracted view

Use Photoshop or other editor to make the desired changes, taking care not to apply any edits that would affect the outer edges of the image. This is to ensure that the image will merge seamlessly with the rest of the panorama when it's put back in its proper place.



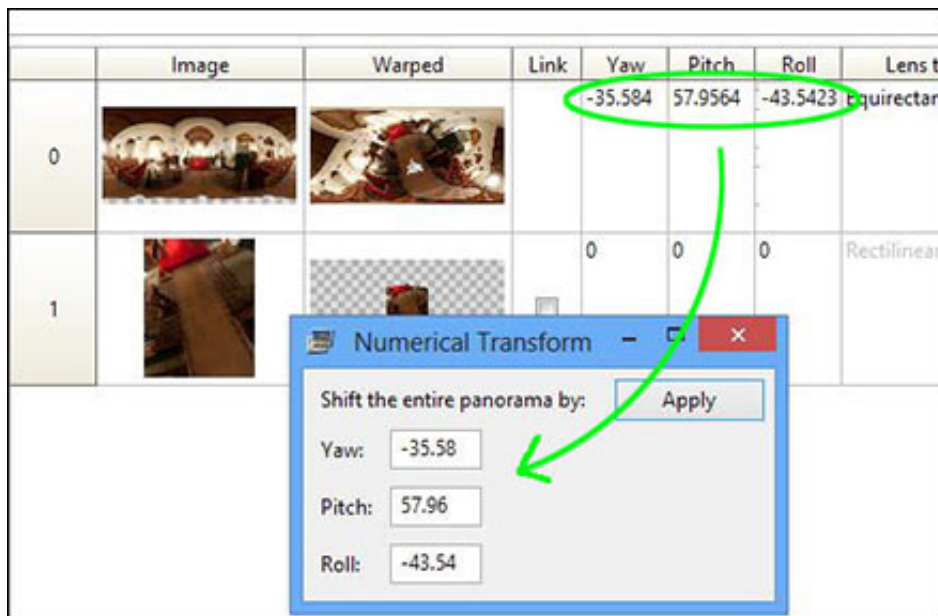
Insert the edited view into the panorama

1. Load the patched file into PTGui using the **Add** button on the **Source Images** tab.
2. Go to the **Lens Settings** tab and set the **lens type** to Rectilinear and **Horizontal FoV** to the FOV you noted down earlier (87 in this example).
3. Go to the **Panorama Editor** window and select **Spherical: 360x180 equirectangular** from the **Projection** menu.

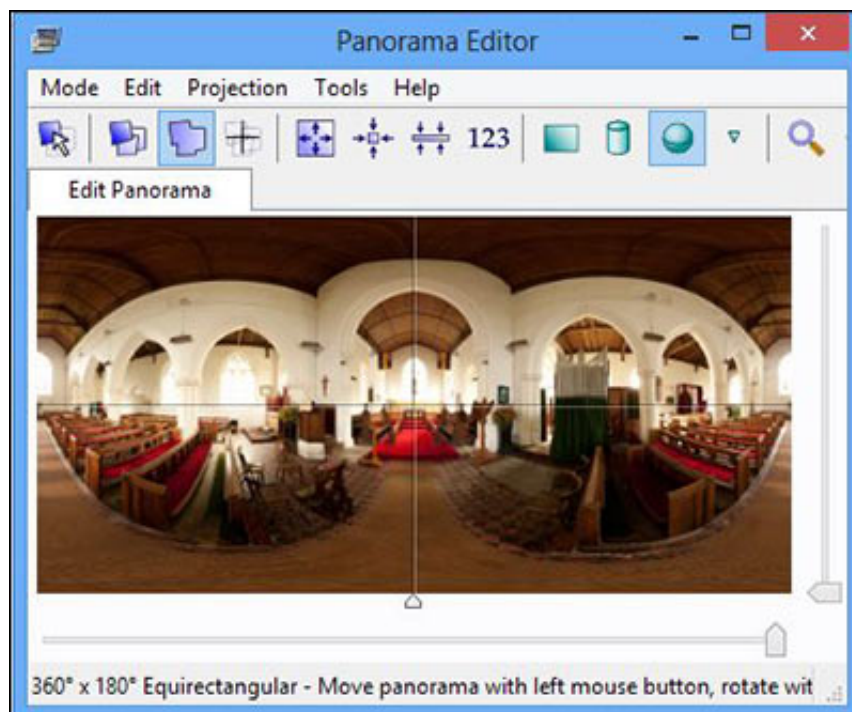


Now we want to rotate the whole panorama back to its original orientation:

4. Select the **Numerical Transform** option (123 icon).
5. Go to the **Image Parameters** tab. Copy the yaw, pitch and roll parameters of Image 0 into the yaw, pitch and roll boxes of the **Numerical Transform** dialog window. Do this one by one using **copy/paste** (ctrl/c and ctrl/v). If just dealing with a simple nadir view, all you need do is enter 90 into the pitch option. Note that the 123 window only displays the angles to 2 places of decimals, but the full value is stored.



6. Click Apply to apply the transformation.



Generate the output panorama

1. Go to the **Create Panorama** tab and select **Maximum Size** again. This should give the same dimensions as the original panorama.
2. Select **Photoshop PSD** for the file format.
3. For the Layers option, select **Individual layers only**.
4. Set an appropriate name for the file.
5. Select interpolator **Bicubic Normal**.
6. Click **Create Panorama**.
7. Open the output image in Photoshop and use **Layer->Flatten image** to merge layers into one.
8. Save and you're done.

Why not let PTGui blend the two images? This may well give a satisfactory result, but the blender is likely to change areas of the panorama outside of the boundaries of the edited view, even though the edges match exactly. The changes are usually quite small and may not be noticeable, but if you want to avoid these altogether, use the PSD output as described. It will always give the best result.

Automating the process with templates

The procedure described above can be speeded up considerably by using templates to apply settings to the PTGui project - particularly for common edits like the nadir and zenith areas. To do this, prepare two template files by saving the project at (1) the point where the extracted view is about to be generated, and (2) when the composite PSD file is about to be generated. The patching procedure then becomes:

1. Load in the equirectangular panorama file.
2. Use **File->Apply Template** to apply project file 1.
3. Set **Maximum Size** output and **file name** and create the view file.
4. Edit the view file in Photoshop.
5. **Add** the edited file back into PTGUI.
6. Use **File->Apply Template** to apply project file 2.
7. Set **Maximum Size** output and **file name** and create the PSD panorama file.

You would need to prepare one pair of templates for patching the nadir and another pair for patching the zenith.