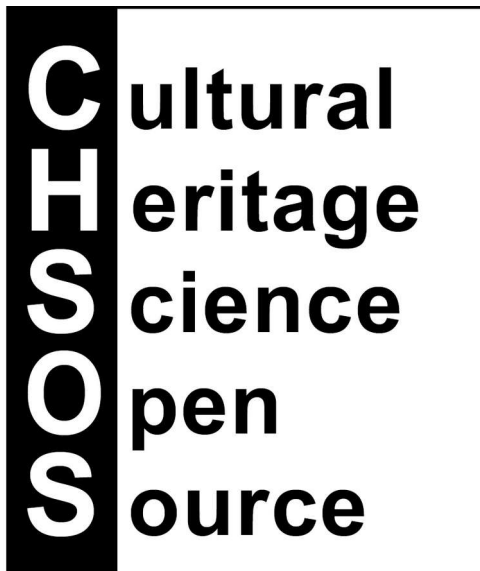


GIMP (2.10)
for
Technical Photography



Intro

This manual is focused on the use of GIMP specifically for the editing we need for TP.

General notes

To change tools with shortcuts press ESC and then the keyboard shortcut for the new tool.

Load an image

We can load images from the FILE menu but also by drag and drop on the main window.

NOTE: the image must be released into the tool box to open it into its own new tab! If an image is already opened, the new image will be added as a new layer if dragged and dropped into the main window.

Single-window mode

Show the window as in photoshop, not exploded. Click in the menu Windows / Single-window mode.

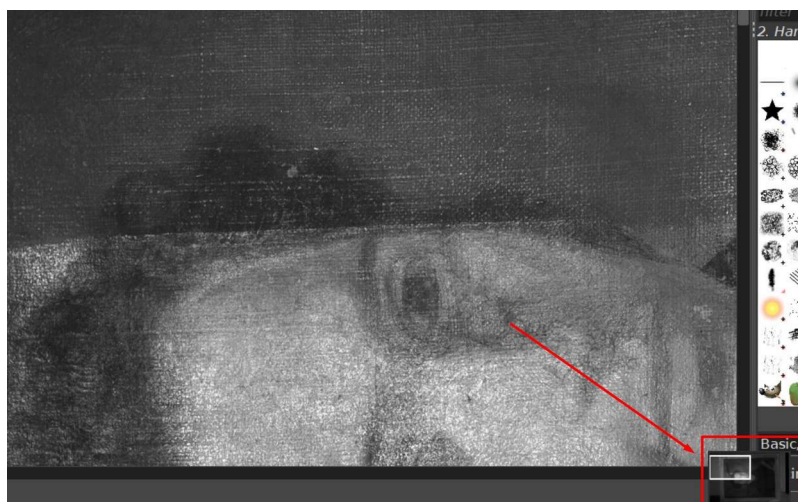
Zooming

Fit image to window. SHIFT + CTRL +J

Navigation window. VIEW / NAVIGATION WINDOW

Magnification rapid shortcuts. 1 (100%), 2 (200%), ...

Navigation Control: This is a small arrow -shaped button at the lower right corner of the image display. Click and hold (do not release the mouse button) on the navigation control to display the Navigation Preview. The Navigation Preview has a miniature view of the image with the displayed area outlined. Use the Navigation Preview to quickly pan to a different part of the image—move the mouse while keeping the button pressed.



Zooming while using a tool. Middle scroll button + CTRL.

Creating the TP file

Drag and drop the VIS image into GIMP. Drag and drop all the other TP images.

Resize IR, IRF and UV

The UVR, IR and IRF images need to be resized because of the focusing shift compared to the VIS. We suggest to use 4 in-scene TP registration target to make this procedure faster. Since IRF is often dark and also has the same proportion as IR (since it has not been refocused) we can just link it with the IR and make the scale changes to the IR and these will be applied to the IRF too.

Procedure for the IR layer (same for the other layers)

- Reduce opacity of the IR layer to 0%.
- Select the “**unified transform**” (SHIFT + T) tool. In its options panel decrease preview opacity to about 50%. The image can be simply dragged by pressing the middle mouse button and the image can be also resized and deformed for each side by dragging the handle on each side. Note that the handles have two components. Dragging the external rectangle allows for scaling movements (no constrain on proportions) while the inside square allows for shearing (deformation). Also, notice that it is possible to rotate the layer by dragging the mouse when the cursor is just close to the handle.
- Notice that in the options panel all the “constrains” should be unchecked to allow all the possible changes.
- It is possible to zoom in and out while using the tool by pressing CTRL and the scroll button on the mouse.

Canvas alignment

The photo of the painting could not be straight and would need to be rectified. We can follow this procedure.

- add vertical and horizontal guide lines.
- link all the layers (check the icon on the left of each layer).
- use the “unified transform” tool to align to horizontal and vertical guide.
- do a final crop to cut the areas likely not covered by any pixel.

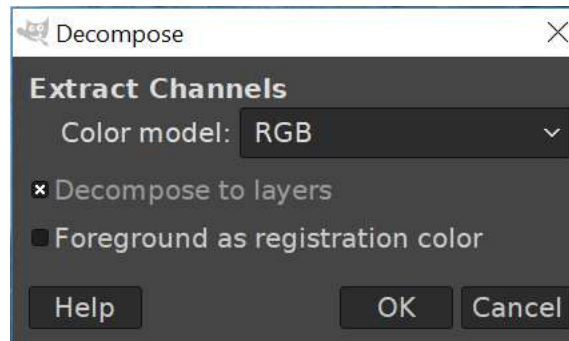
Export all layers as JPEG

We need to install “export_layers” plugin. This plugin allows to export all the layers as separate images, very quickly. We usually want to export images at full dimension and also reduced size to be used for docs preparation. To reduce size IMAGE / SCALE IMAGE . Then go back in HISTORY to restore the original dimentions. Do not use CANVAS SIZE since this command reduce the view, not the image itself.

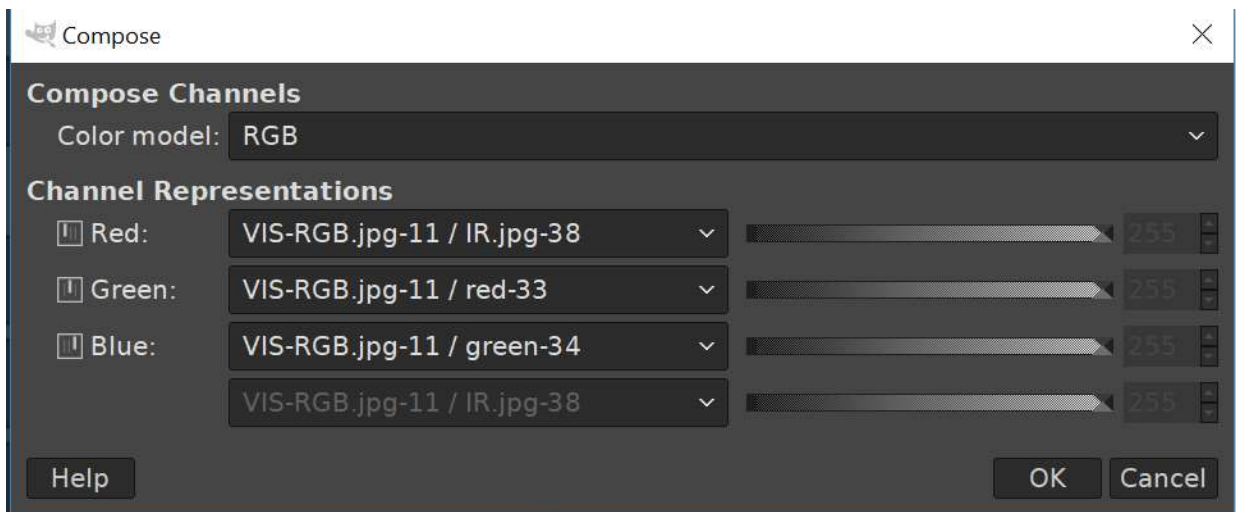
IRFC

Prepare the IRFC after all the TP file has been created and we have final vis and ir images as jpeg. We close the TP file. We load the VIS image into GIMP.

- Decompose the VIS image into its channels. COLORS / Components / Decompose / check box “decompose to layers”.



- A new tab is created containing the RGB layers of the VIS image. Drag and drop the IR image into this new tab.
- Click COLORS / COMPONENTS / Compose. In the new popup window we do the usual composition to make the IRFC image. VIS Green into Blue, VIS Red into Green and IR into Red.



- The new image can be copied and pasted into the TP file.

Annotating Text and group layers

Use the “text” tool (T) to position notes as for example for samples. Each text becomes a layer. These text layers can be grouped. You can create a layer group by clicking on the Create a new layer group button at the bottom of the layer dialog box. This empty layer group appears just above the current layer. Give it a name (double-click or F2 on the name) and simply drag and drop the layers into this group.

Brightness – contrast – levels (All TP images and IRR)

For IRR it is often necessary to enhance contrast and even work with levels to have a better balanced image. COLORS / Brightness-Contrast . This window has also the option to work with levels.

Preparation for IRR

For our specific IngaAs camera it is necessary to crop the left border of the image. We can load all the IRR images into single layers and the crop as usual and export the layers.

Egyptian blue virtual restoration

This is the case when residual grains of Egyptian blue are mapped in the IRF image. It is useful to try to reconstruct the original look of the object with some virtual restoration. First the VIS and IRF should be registered. We make then a selection of the dark area of the IRF image with the “Select by color” tool and we erase this area (making it transparent) with the “erase tool”. At this point we use the “COLOR / colorize” tool to give a blue color to the IRF image. Egyptian blue will appear blue and we can show it over the VIS at 100% opacity or adding a bit of transparency.