

» **Gimp** Open source image-editing software you can get your teeth into

Gimp: Create a

Michael J Hammel continues his journey on the fickle wings of inspiration this month. He invites you to fire up Gimp and join him on his travels.



Our expert

Michael J Hammel is a contributor to the *Gimp* project and the author of three books on the subject, including his latest, *The Artist's Guide to Gimp Effects*.

After nearly 30 years of developing and using software, I sometimes find it hard to find motivation for my next project. The same holds true for my artwork, so when I come across something that reinvigorates my enthusiasm I tend to hold on to it like a CEO on to bailout funding. Enthusiasm is currency – and it must be spent quickly or the value declines.

So I must ask your forgiveness, dear reader, as I indulge my enthusiasm with another expert-level project based around inspiration. As with last month, this tutorial is more about trying to inspire budding *Gimp* users to dig around and combine ideas than revealing how to perform a specific process, although I'll cover the process as well.

Revitalise your burnt out creativity

This project, which I call Fire Goddess, is based on two online tutorials that I've merged together. The first of my inspirations, Mystic (<http://psdtuts.com/designing-tutorials/the-making-of-mystic>), produces in *Photoshop* what I can only describe as a Mayan god. This project is completely reproducible under *Gimp*, but I was unable to find suitable ornamental pieces to use here.

My second inspiration comes from a *Photoshop* tutorial that shows you how to create an image of a woman on fire <http://psd.tutspius.com/tutorials/tutorials-effects/how-to-create-a-flaming-photo-manipulation>. This project

Take stock

■ Our basis

Woman with hair blowing upward: bigstockphoto.com/photo/view/1921777

■ Ornate frames

Golden picture frame: istockphoto.com/stock-photo-1710947-golden-picture-frame.php

Vintage gold frame: istockphoto.com/stock-photo-4930364-vintage-gold-frame.php

■ Flames

We used the fire pictures at:

sxc.hu/browse.phtml?f=view&id=1093986

sxc.hu/browse.phtml?f=view&id=1099709

sxc.hu/browse.phtml?f=view&id=1104673

sxc.hu/browse.phtml?f=view&id=1143736

is also reproducible in *Gimp*, but the lack of a warpable Transform tool makes the process more difficult – though not impossible – to complete.

The concepts behind the two tutorials are complementary and encourage experimentation. If you want to follow this amalgam project exactly, it requires a number of stock images that are either available for free or a low cost from stock image repositories (see *Take Stock*, above). It doesn't require the *Gimp Paint Shop* package I've described over the past few months, but having it will offer you more options.

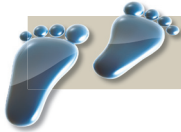
I've created the project at 2350x2033, but if you need to reduce memory and CPU requirements, scale the stock images down by 50% before starting.



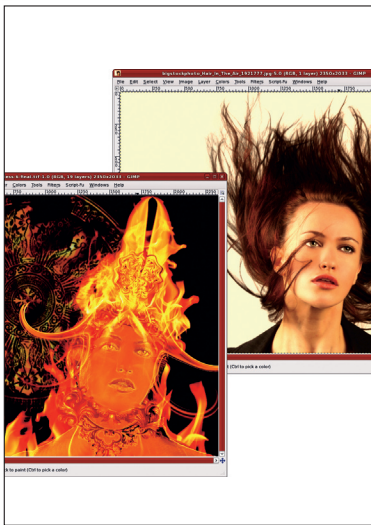
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» **Last month** We destroyed a city with Gimp and a graphics tablet.

fire goddess



Step by step: Set the world alight!



1 A simple process

Let's start by looking at the original image and the final image. As you can see, plenty has changed, but there are two notable alterations: firstly, I've removed the hair of the girl and, secondly, the image is flame coloured.

The reason our goddess is hairless is that I'd originally intended this project to closely follow the tutorial for creating a flaming girl. With that in mind, I chose a base image with hair that should be easy to convert to flames using *Gimp*. However, because that process used a feature of *Photoshop* that isn't easily duplicated in *Gimp* (specifically, the warpable Transform tool), I changed this project, making the hair in the source image irrelevant.

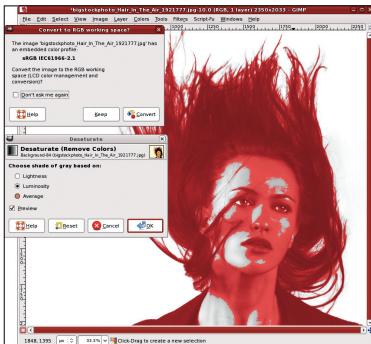
Throughout the project you'll also notice that flames are not just components of the image, but also used for colouring. The easy way of using a flame to colour a layer is to desaturate the layer to be coloured, add a flame layer above it and set the flame's Layer Mode appropriately. However, if you place anything below that layer, the black region around the flame may block it from being visible.

To avoid this, we'll use layer masks on flame layers or simply copy and paste flames (without the black backgrounds) from their source image.

The final process for creating the Fire Goddess can be reduced to these basic steps:

- 1 Isolate the girl from the background.
- 2 Detect the edges of her head and create multiple corresponding layers to get a perfect selection.
- 3 Blend in ornamental elements.
- 4 Do some fine blending to remove excess details.
- 5 Colour the image with flames.
- 6 Create the flaming hat.
- 7 Add the background emblem.

Note that even if you follow this tutorial exactly, you won't produce the same image as me. The steps I'll present allow for too many variations, especially when creating the flaming hat. Don't be discouraged if your first attempt is less than ideal, though. I went through seven different designs before settling on this process and the first four or five of those are – to be kind to myself – not something I'd ever show in public.



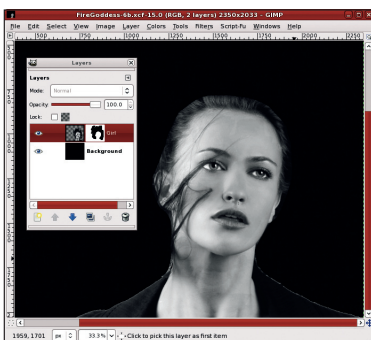
2 Isolate the girl

The first step in this project is to isolate the girl from her background. We'll do this primarily because the background in the source image for the girl isn't required and its colour may cause problems when mixed with other layers. Removing it will also enable me to add background elements behind the girl's head.

To isolate the girl, first Desaturate (Colours > Desaturate) the source image with the Luminosity setting selected. The reason for using this setting is that the source image has a yellowish tint when converted from its original colour space (provided in the image when downloaded from the stock image website) to the colour-managed display in *Gimp*. I say colour-managed, because I configured the monitor profile for my Acer X203W monitors

in *Gimp*'s Preferences. Thankfully, the yellow tint converts to a bright white when the Luminosity option is selected in the Desaturate window.

Now I can use Select By Colour from the *Gimp* toolbox and click on the white background. With the Tool Options Threshold set to 50, this will select all of the background, a little of the hair and some of the face and neck. To avoid selecting any skin, switch to Quick Mask mode and paint out the white areas on the girl with a large black brush. Now switch off Quick Mask mode and Invert the selection. This selection is then copied and pasted to a new layer, which I name Girl. I then fit the new layer to the canvas using Layer > Layer To Image Size so that any modifications I make won't be restricted by the size of the layer.



3 Cutting her hair

In the original layer (which is titled Background by default), I use Ctrl+A to select the entire layer and then drag the black foreground colour into the canvas to fill that layer with black.

Now it's time to get rid of the girl's hair. Just like most operations that involve components of an image, I don't really want to remove these from the layer itself, but rather leave them in place and mask them with a layer mask. The reason for leaving these elements in place is so that I can decide later to reincorporate the component (in this case hair) into the project. This kind of flexibility is a real

assets of editing images digitally, so I encourage you to make use of it.

In this case, I add a white layer mask to the image. Starting with a large brush and switching to smaller brushes as I proceed, I paint with black on top of the girl's hair in the layer mask until most of the hair is removed. I leave a small amount of hair because I will be using edge-detect filters later and I know the lines in the hair will provide another visual feature using those filters. Afterwards, I switch off the Girl layer's visibility so it won't interfere with the next steps. »

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4 Edge detection

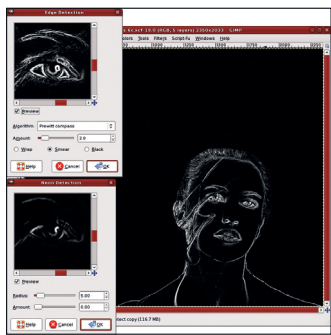
The next step in this project is to create detailed outlines of the girl using two edge-detection filters: Edge (Filters > Edge Detect > Edge) and Neon (found by going to Filters > Edge Detect > Neon). These produce similar results that I'll combine later with Layer Modes.

To begin with, I duplicate the Girl layer and name the duplicate layer Edge Detect. After that, I then open up the Edge Detect filter and select the Prewitt Compass algorithm. I choose an algorithm

based on the preview and here I selected the one that showed the most detail. Apply this filter to the layer and then set the Layer Mode to Screen.

The Girl layer is duplicated again, this time naming the new layer Neon Detect. This layer is moved to the top of the layer stack and the colours are inverted in this (Colours > Invert) before applying the Neon edge detection filter. The Layer Mode is set to Screen and, finally, this layer is duplicated once, resulting in three layers dedicated to edge detection stacked above the Girl layer.

Zoom in now and you may find some strands of hair that weren't masked in the last step. These can be left, or you can remove them with the Eraser. If you do this, the Eraser will probably need to be applied to the same area on each of the three edge detection layers. These would be too difficult to see in print, so I'm not showing them here. In my project, however, I erased the extra strands of hair – I'm obnoxiously detail-oriented.



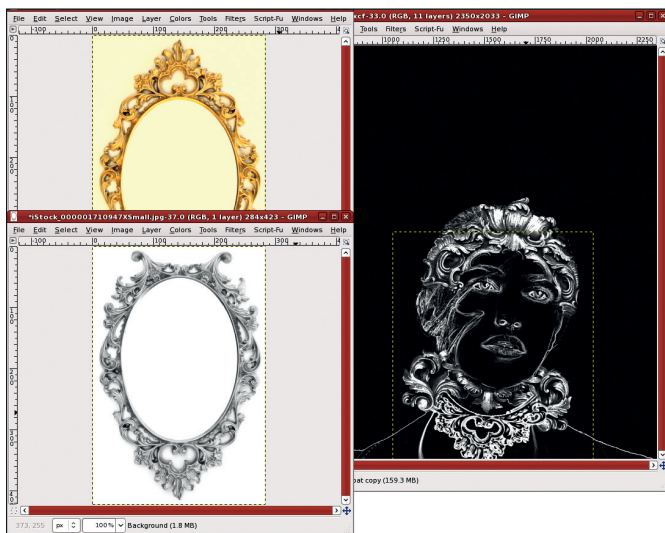
6 Continue decorating the goddess

The ornament around the neck is created in exactly the same way, albeit with a new copy of the frame. A new copy is required because the angle of rotation, size and position will be different to the Forehead version, not to mention being masked differently. In this layer, the bottom edge of the frame is kept while the rest is masked out.

Similarly, the collar is decorated with the oval frame. This time the frame is flipped vertically before rotation, sizing and positioning. Finally, a mask is added to keep just the lower section of the frame.

Note that the frame images were significantly smaller than the main image window and the girl.

This required increasing the size of the frames. Scaling an image up is problematic because the scaled image quickly becomes pixellated. However, in this case the pixellation is hardly noticeable because of the weakly identifiable shapes (the ornate structure has no discernible pattern). Using blending layer modes also hides some of the pixellation and our colouring technique hides it even more. Large prints, however, would likely show the pixellation. Therefore, if you intend to make any prints of this image, they should be no larger than the size of a magazine page. (Pretty convenient, eh?)



5 Blend in the ornamental elements

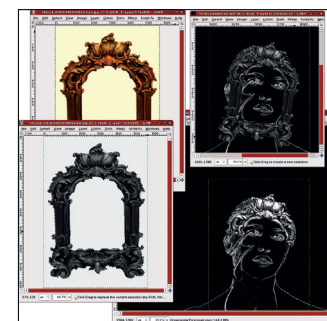
Now it's time to get our goddess looking ornamental. The best place to find suitable designs to use for this are picture frames and building architecture. This project has stuck with picture frames only because I couldn't find any really good photos of Victorian architecture.

There are three ornamental pieces I'm adding to this design: one on the forehead, one at the junction of head and neck, and one to form a collar. The first two come from a rectangular frame while the latter comes from an oval frame.

I start with a rectangular frame and Desaturate it. Because the frame is fully enclosed in the solid-coloured background and also encloses a solid-coloured area, selecting the frame is easiest using the Fuzzy Select tool set with a Threshold of 50. Clicking once outside the frame and again inside it creates a selection of the background. Grow this by one pixel (something I nearly always do to avoid leaving light-coloured pixels along the edge of the selected object) and then Invert the selection. Copy and

Paste the frame into the working canvas as a new layer at the top of the layer stack. Name this layer Ornamental:Forehead and ensure the Layer Mode is set to Normal.

Once that's done, Scale, Rotate and position the Forehead layer over the girl's face. Use a layer mask to remove the left and right sides and bottom edge of the frame. Duplicate the layer and set the duplicated layer's Mode to Dodge. Dodging the copy over a desaturated Normal Mode original enhances contrast (which makes it look shinier).



7 Blending to remove excess details

The ornaments didn't cover as much of the girl's hair as I'd originally thought it would, so to get rid of these unsightly blemishes on our goddess, it's time to turn our attention to the Eraser and Smudge tools.

Smudging in the edge detect layers is possible (white and black pixels together produce shades of gray), but I'd rather leave some of the line details in the face. To accomplish that, I'll use the Eraser with a Grunge brush and set the Brush Dynamics to increase Opacity, Hardness and Size when pressure is applied using my

Wacom pad. It's worth mentioning here that throughout this project I haven't needed to break out the pad, but this is one place where it comes in handy. If you don't have a graphics tablet to hand, you can just use a smaller brush and vary the Opacity manually.

Now I apply the Eraser to each edge-detect layer in turn, starting with the upper layers. I do only a small amount on each layer before moving to the next, then rotate back to the top and repeat. My goal is to try and keep as much of the detail as possible while losing the obvious hair lines.



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8 Smudging out excess hair

Removing the hair also means Girl layer comes back into view. Now switch off the visibility of the three edge detection-related layers and turn on the visibility of the Girl layer. Enable the Layer Lock for the Girl layer and then use the Smudge tool with any appropriate brush to blend the hair out of this layer. Try to keep the lighting smooth across the cheek by clicking in lighter areas first (the cheek) and dragging into darker areas (the

hair). Smudge the neck and clothing as well.

With the Layer Lock enabled, you don't have to avoid smudging outside the girl's outline. While this is something I desired for this project, you could express your creativity by disabling the Lock and smudging all over the place. Just be sure to colour the smudged areas with some fire later. When you're done, make the edge detection layers visible again.



10 Create the flaming hat

Finally, we're at the really fun and creative part. The process for creating the fire hat is remarkably simple, but it will more than likely take you a couple of attempts to get it just right. Start with a flame image like the one shown below – a flame, not a roaring fire. Copy just the flame (without the black background) into the project's window. Name the new layer Flame Hat. Scale this layer to fit from the girl's forehead and stretch it to the top of the image.

Duplicate this layer, flip it horizontally and position it close to the original flame layer. Use a mask to merge the flames together if necessary. Then merge the two layers by selecting the top layer of the two and selecting Layer > Merge Down. Move the merged layer to the middle of the image



window and size the layer to the image (again using Layer > Layer to Image Size). Now you have the basic flame hat frame in place with some space around it to create the flame swirls.

Use the iWarp filter to create the flame swirls. Now, here's the tricky part. The left side of the hat will be swirled using the Swirl CW mode and the right side of the hat will be swirled using the Swirl CCW mode. For this particular flame, I found two spots on each side which would make good swirls. Clicking (never dragging) at various points in the preview, I was able to create two swirls with a nearly uniform appearance. Clicking and holding also works, but you'll need to hold for a very short amount of time or the swirl gets too big.

You should experiment with the Deform Radius and Deform Amount while you do this, as well as where to click in the preview. If the preview gets messed up, just hit Reset and try again. It may take patience, but if you experiment enough, you'll get it in the end.

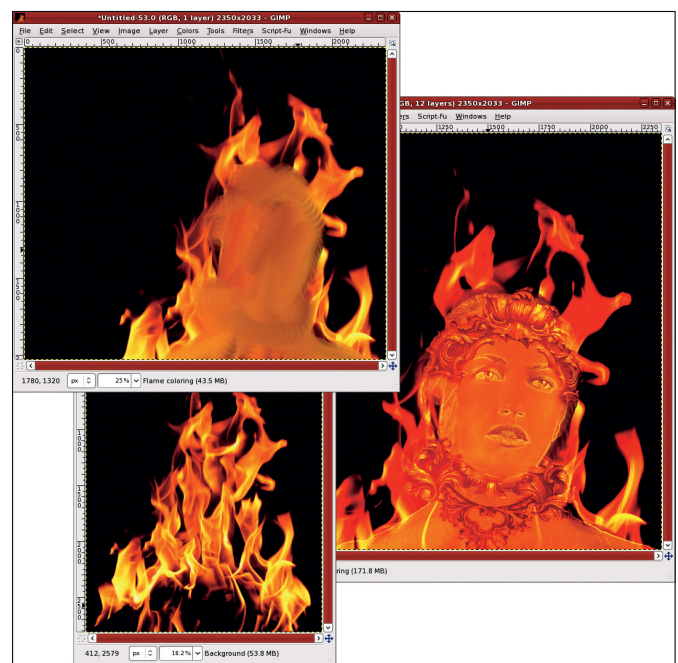
After applying the iWarp settings to the Flame Hat layer, position and Rotate the hat in place over the girl's head. Set the Layer Mode to Screen, then add another copy of the roaring fire above this layer, scaled so the whole flame fits inside the hat. Set the Layer Mode for the roaring fire layer to screen and use a layer mask to blend it into the hat.

9 Add flame colouring

Colouring is the next step. The girl is coloured first, simply by using Colourise with Hue, Saturation and Lightness set to 30, 90 and -30, respectively. Next, a roaring fire image (flame and black background) is copied in as a new layer to the top of the layer stack. It's scaled so that the flame fits completely over the girl, then the layer is cropped to fit the image (Layer > Layer to Image Size). Set the Layer Mode to Hard Light.

When Layer To Image Size is used, the layer may not span the width of the image and you'll see a white band. If this happens, click the white band with the Fuzzy Select tool, Grow by it one pixel and fill the selection with black.

At this point, the flames obscure the girl's face and you have two options: leave them or use the Smudge tool on the flame layer to let the face and ornaments show through. I chose the latter option.

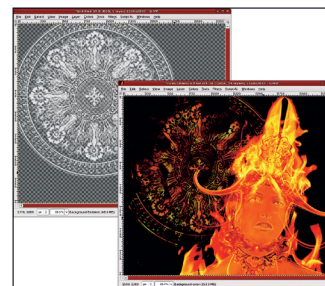


11 Add Background Emblem

The last step is extremely simple. To add a sort of Mayan feel to this project, I selected the Mandala

brush from the *Gimp Paint Shop* collection. With the Paintbrush tool selected, I increased the scale of the brush until a single brush click was roughly three quarters of the size of the image window. Then I added a transparent layer above the background, made the foreground colour white and clicked once in this new layer.

Above the Mandala imprint, I once again added the roaring fire image in a new layer. Scale the fire to cover most of the imprint and then set the Layer Mode to Multiply. And that's it.



Summary

Earlier I mentioned that I toyed with the idea of removing the girl from the image. This didn't look right until I added the Mandala imprint layer and coloured it with flame. Now when I remove the girl layer, the imprint shows through, which looks pretty good. Why not take this basis and experiment some more? Soon you'll have a great variation on this theme. **LXF**



» **Next month** Fire up the dilithium crystals and add a touch of warp speed!