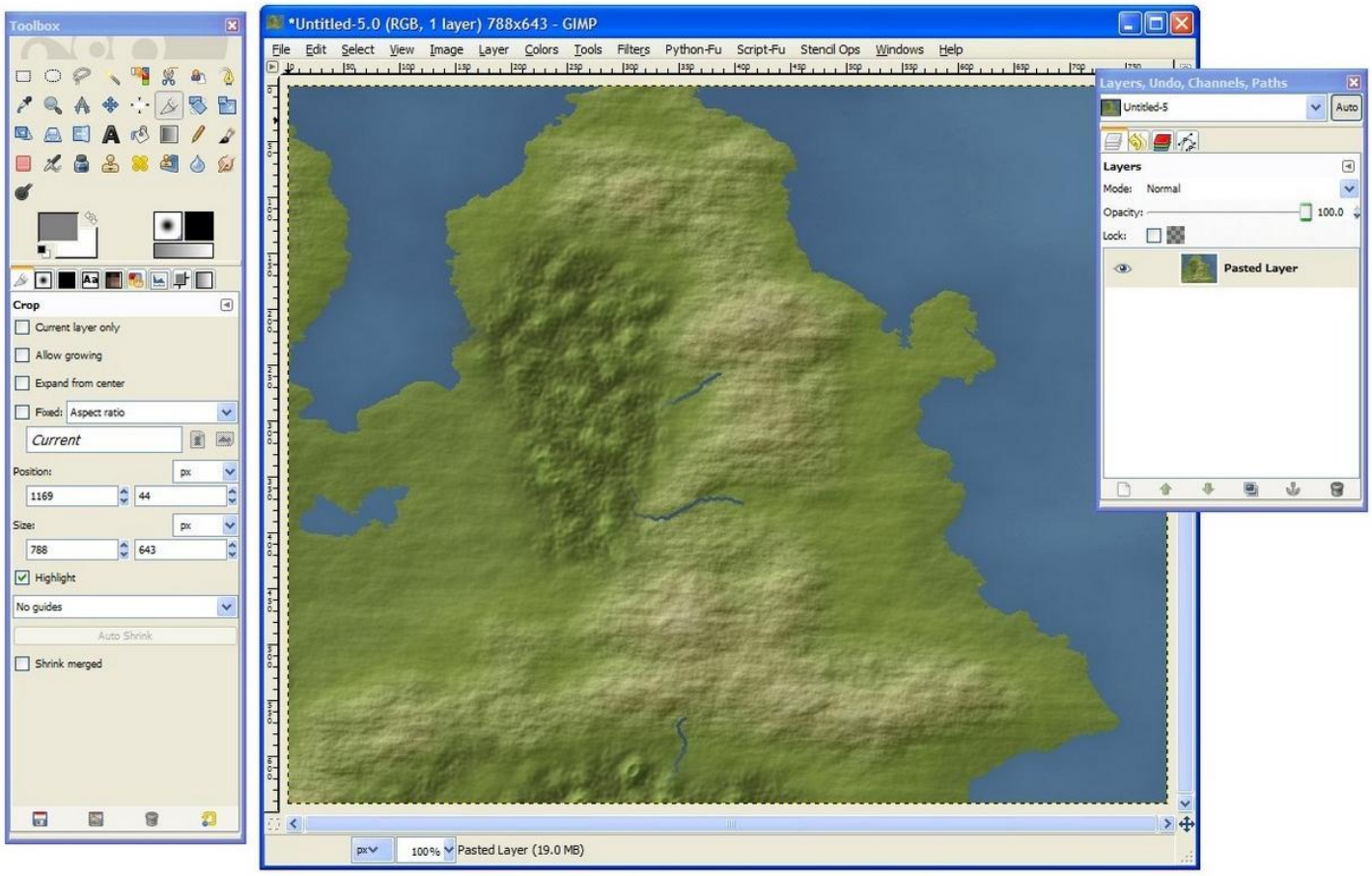
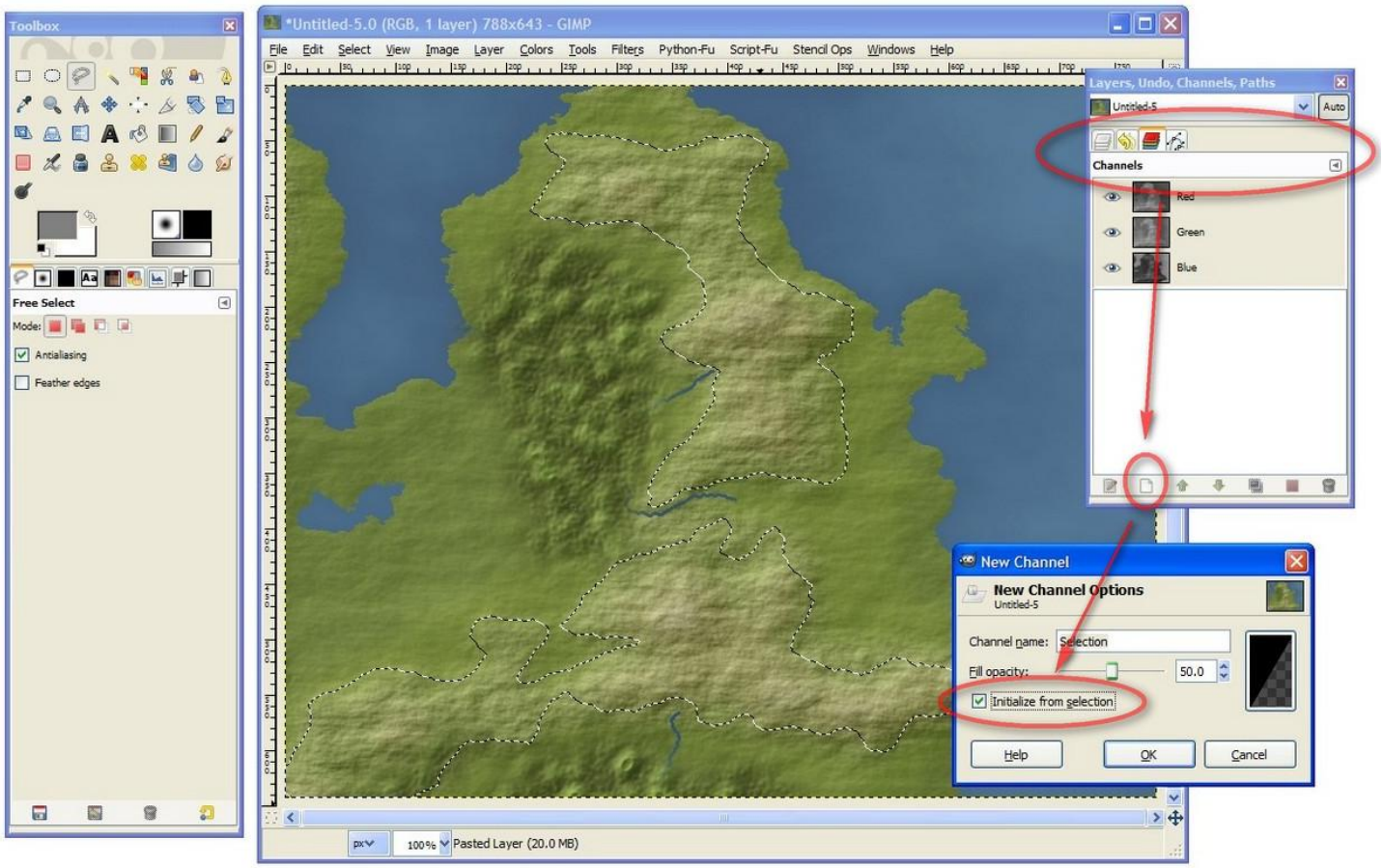
Simple Mountains in GIMP

…a tutorial by RobA of Cartographers' Guild

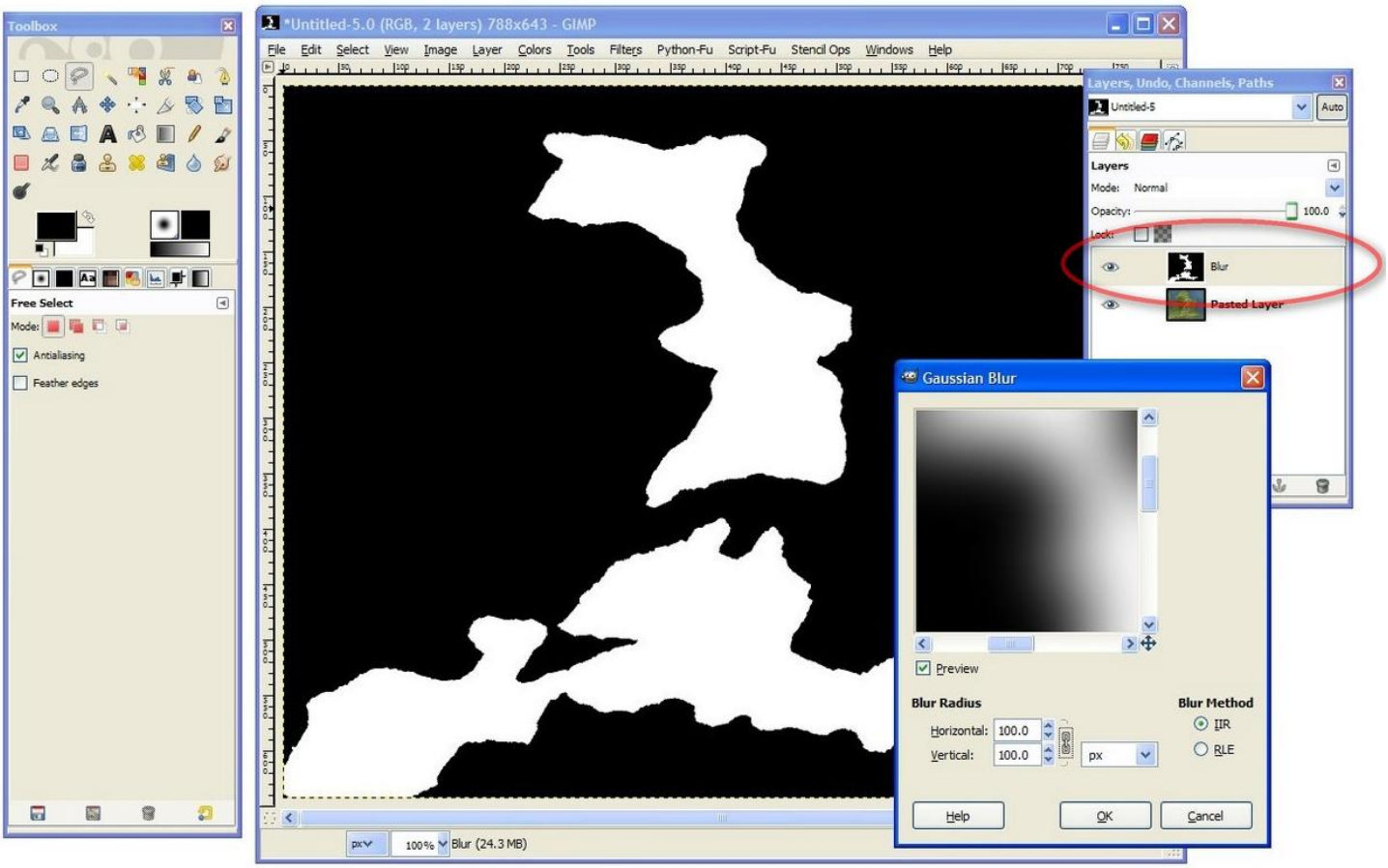
1) Starting with a piece of Nerdling's Campaign Setting Map (which has nice colours already - which is why I'm not going to show anything about colours except snowcap).



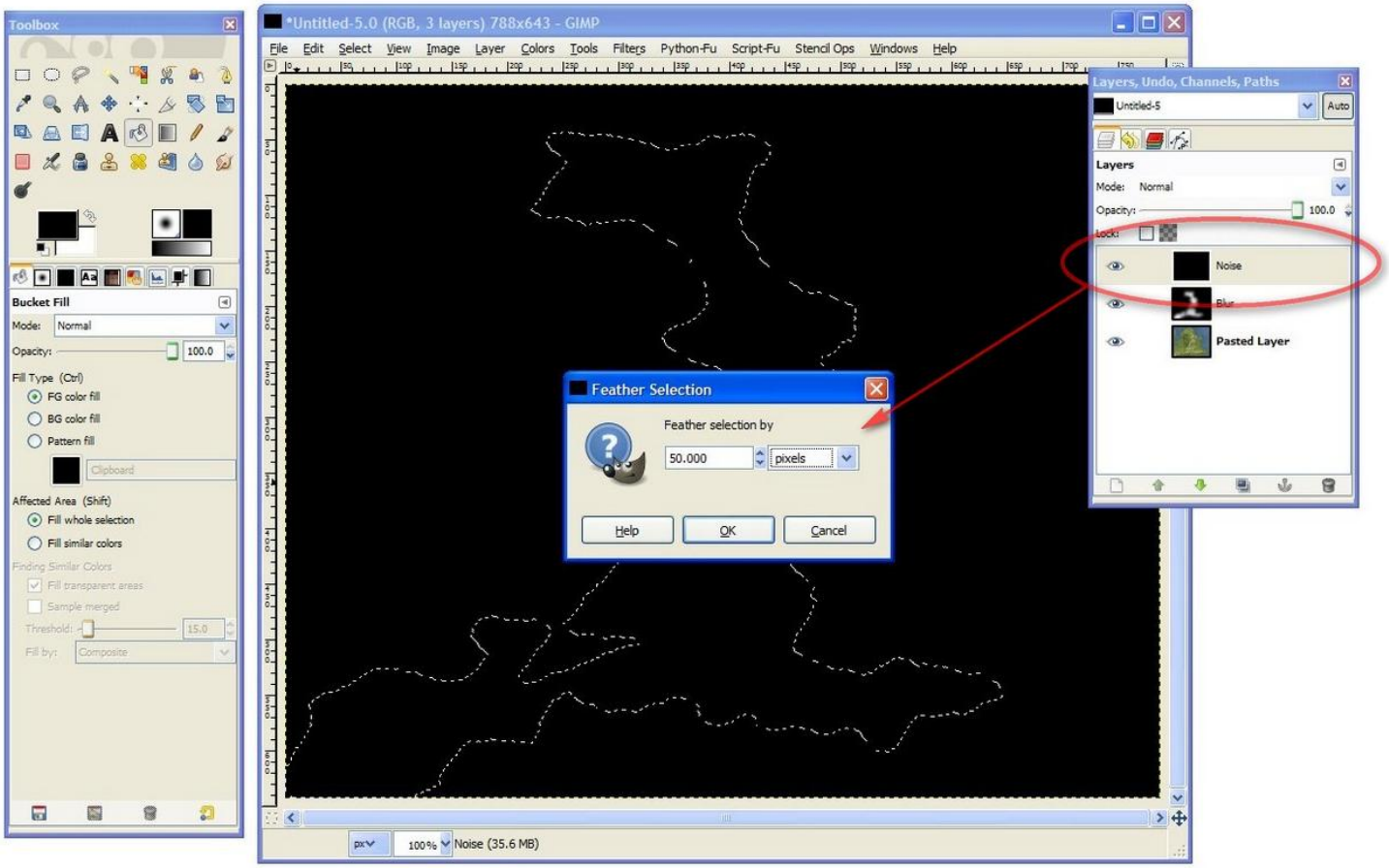
2) Make a selection using the lasso tool around the area(s) you want the mountains. On the Channels tab, click New Channel. Select the "Initialize from selection" check. This will give us the ability to bring up the selection again by coming back to the channels tab, selecting the "Selection" channel and clicking the "Selection from Channel" button (next to the garbage can icon).



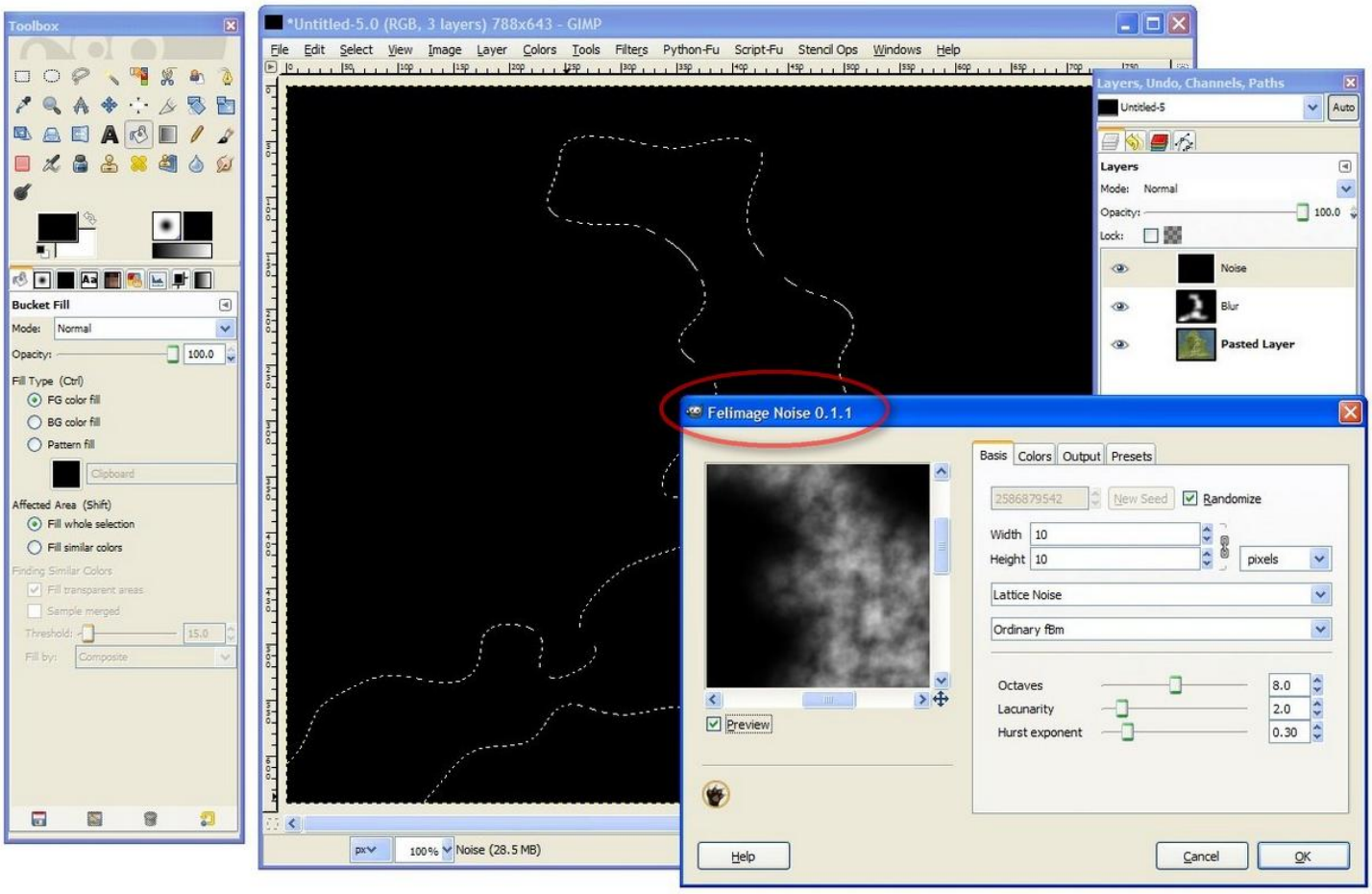
3) Create a new black filled layer named "Blur". Since we still have the selection, fill it with white. Select > None then Gaussian blur 100 px or so. (It depends on the size of the map.)



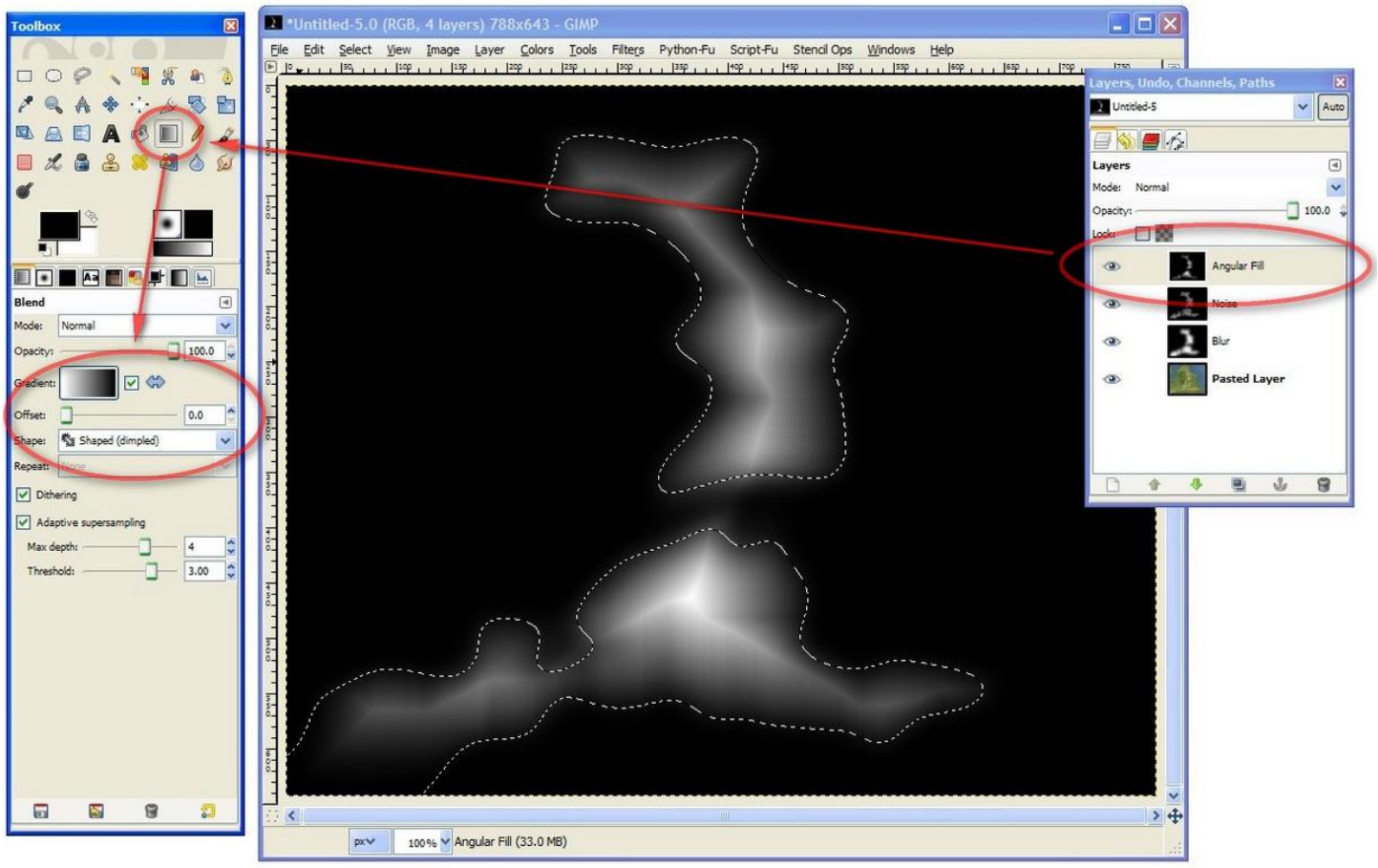
4) Create another new black filled layer named Noise. Load up the selection channel as a selection, and feather it 50 px or so. (Again, depending on the size of the map.)



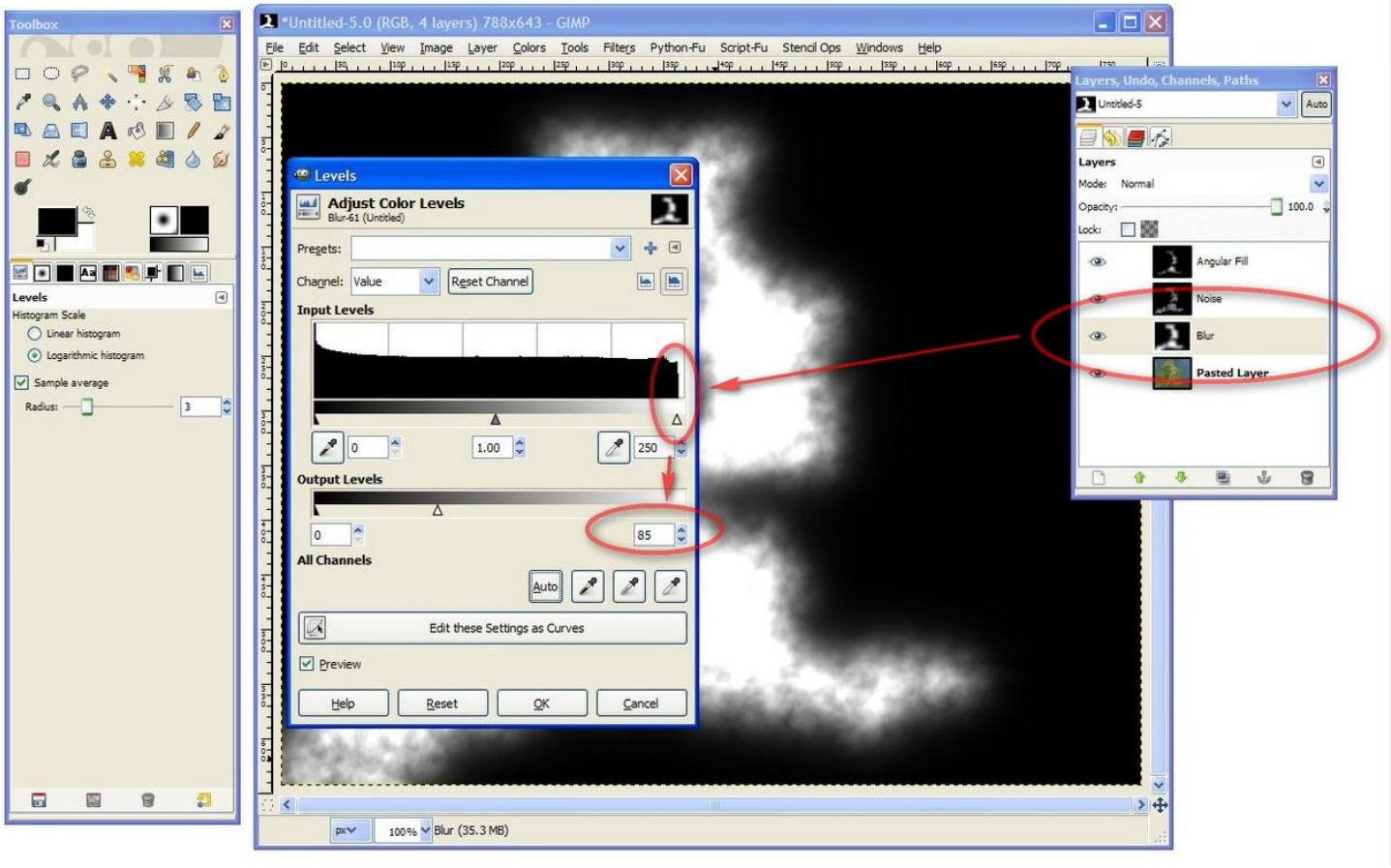
5) Fill the feathered selection with B&W rendered cloud or noise. (I used the Felimage Noise plugin.)



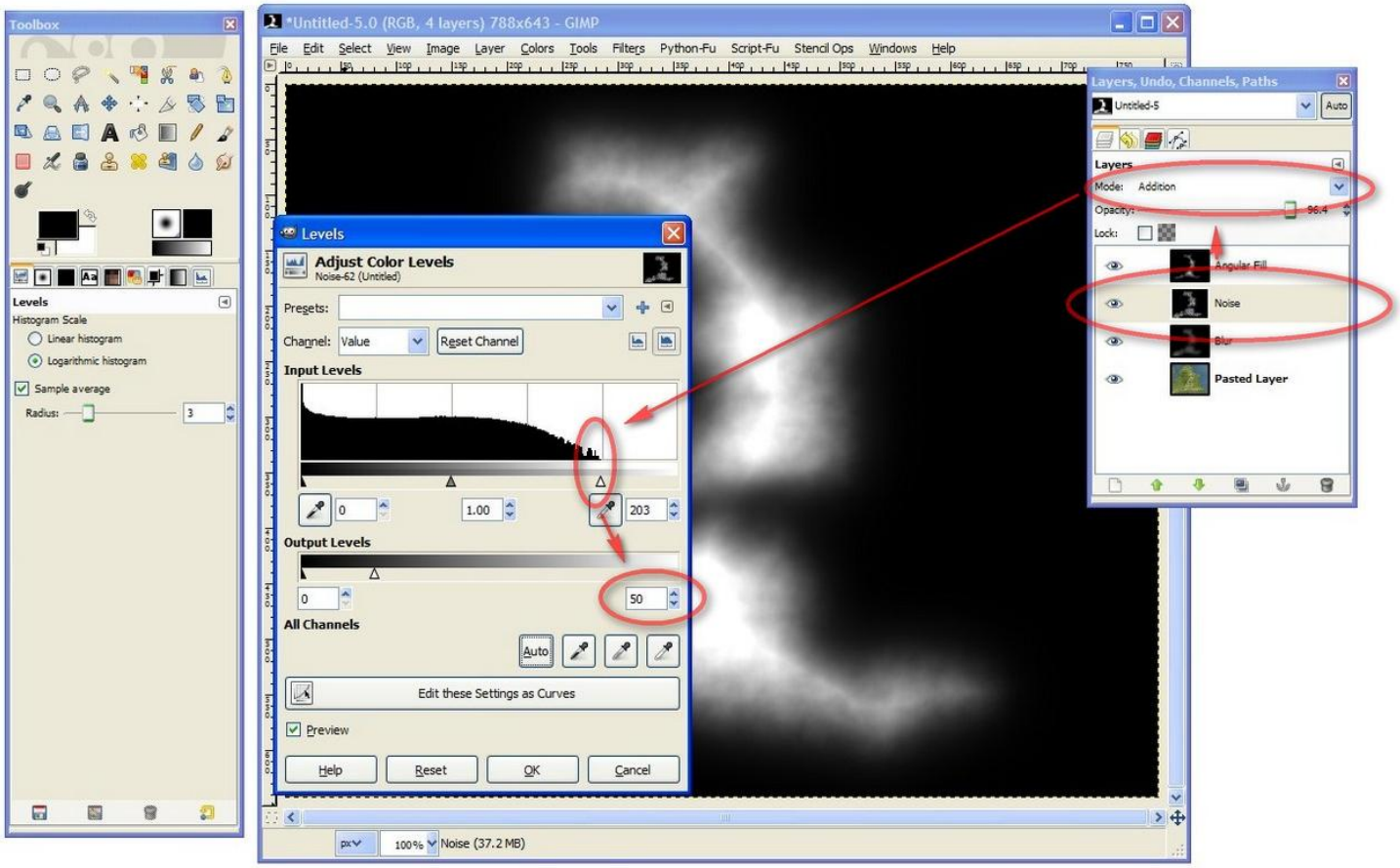
6) Create another black filled layer named "Angular Fill". With our feathered selection, fill it with a Shaped (dimpled) gradient fill.



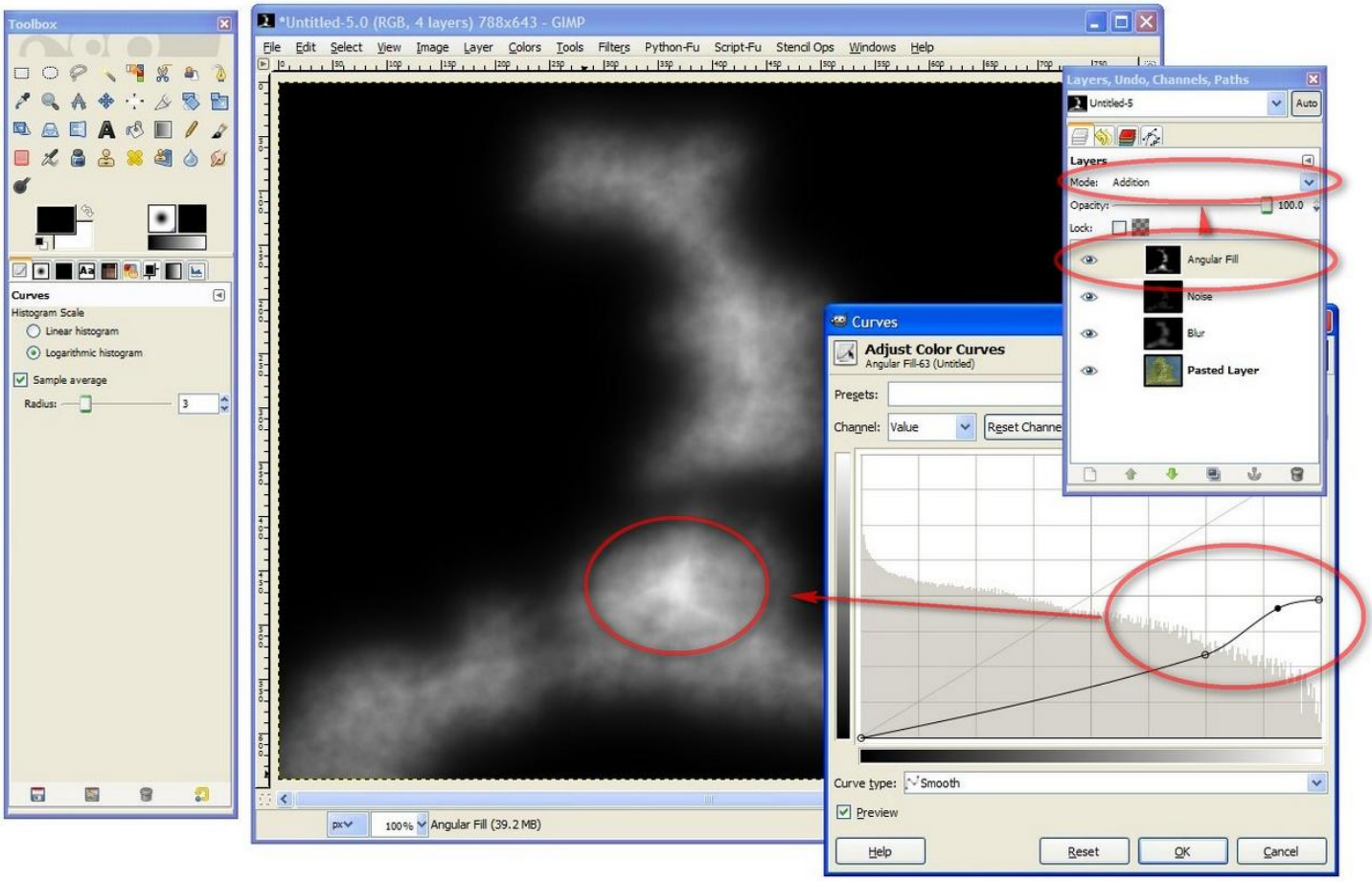
7) Change Layer Modes of the Angular Fill and Noise layers to **Addition**. The image will look all blown out. Select the Blur layer and adjust the levels, pulling down the output bright level to 85 or so.



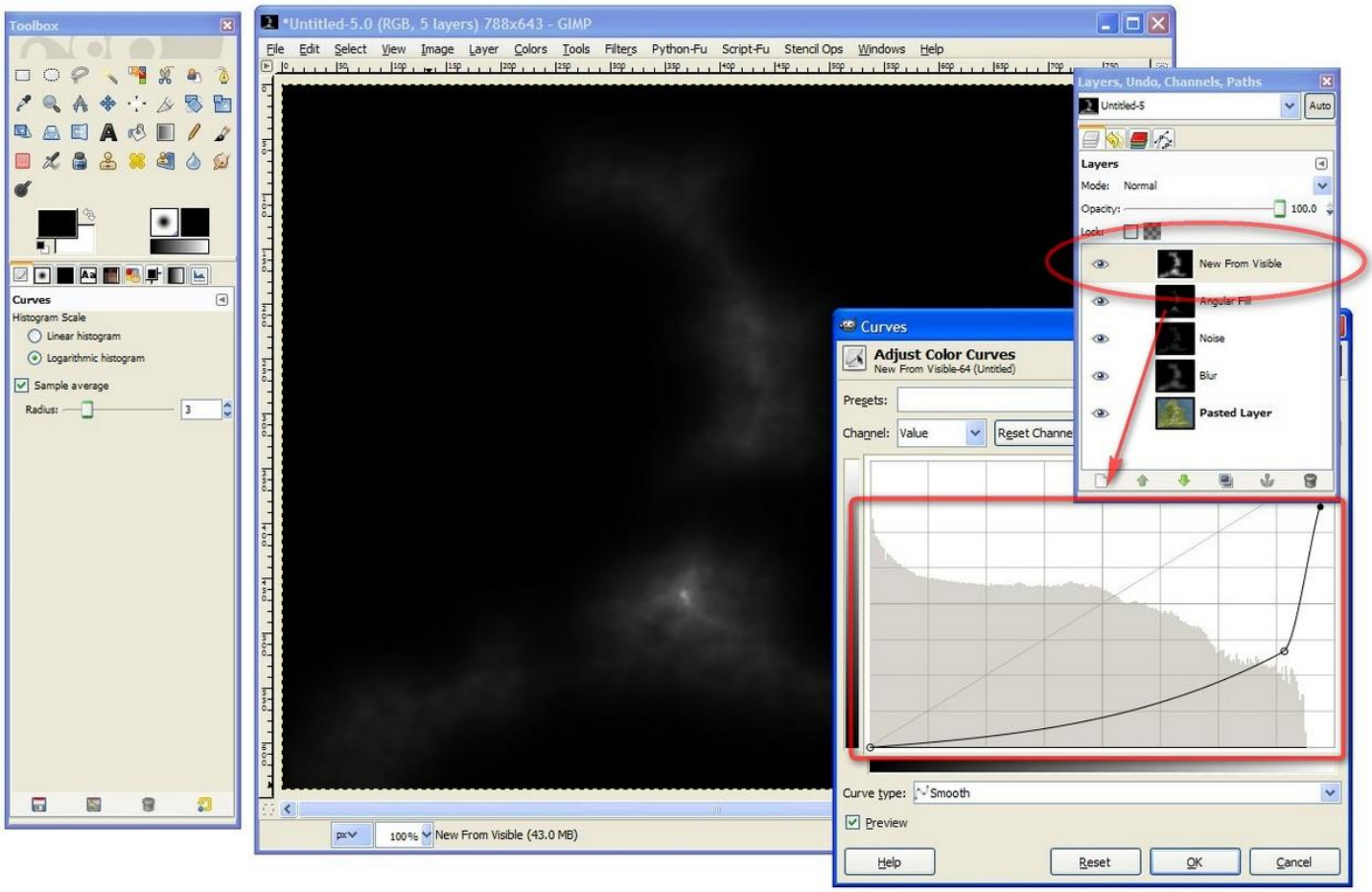
8) On the Noise Level, Also pull down the **brightest level** to 50 or so. Do this by sliding the input white level down to where you see something on the histogram, and slide the output white level down to 50.



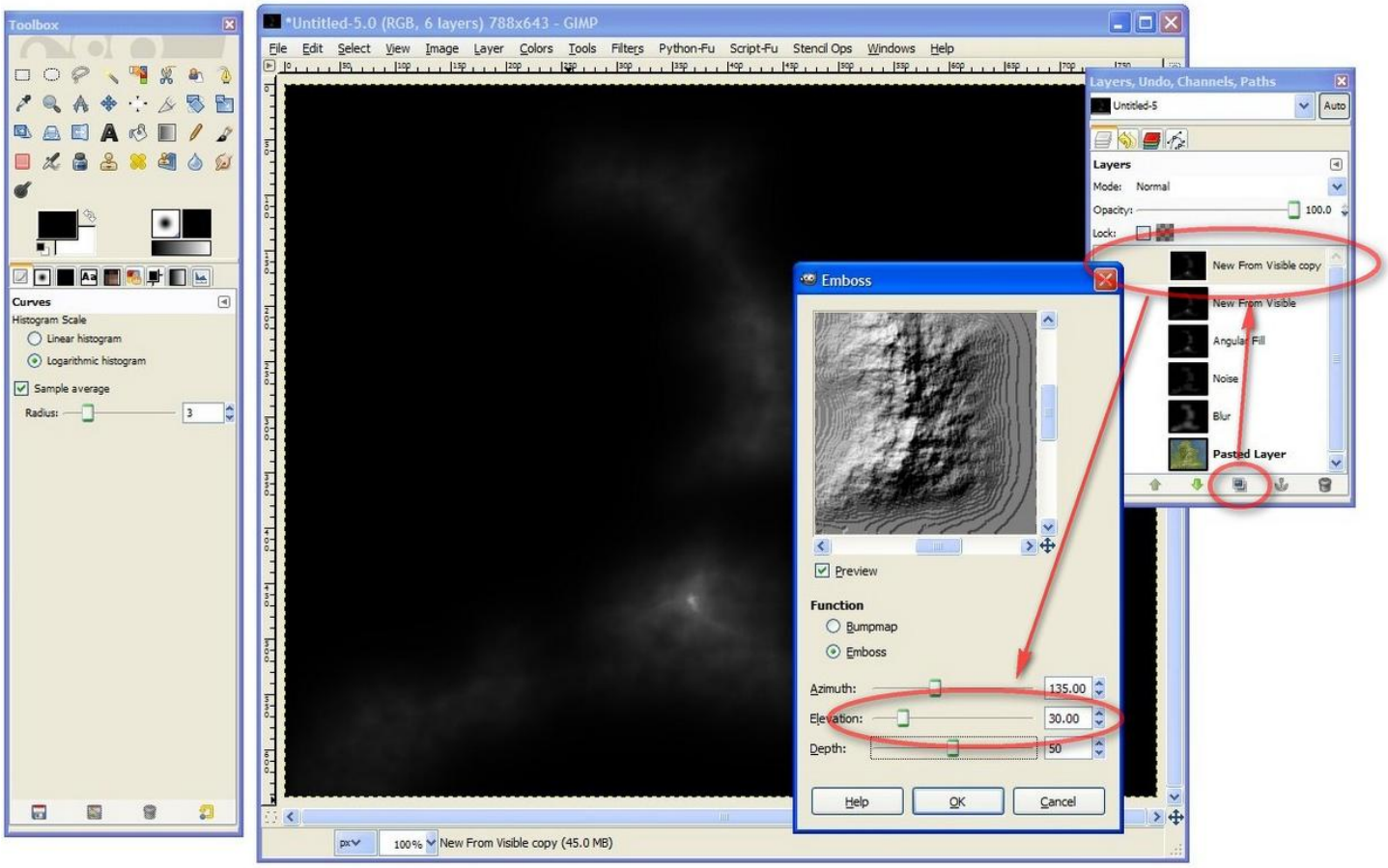
9) You could use the levels on the Angular fill layer, but you get more control with curves. (This is where I spend lots of time "tweaking".) First, bring down the right land side of the line until there are no highlight blowouts (watch the image). Then shape the curve similar to what I have done.



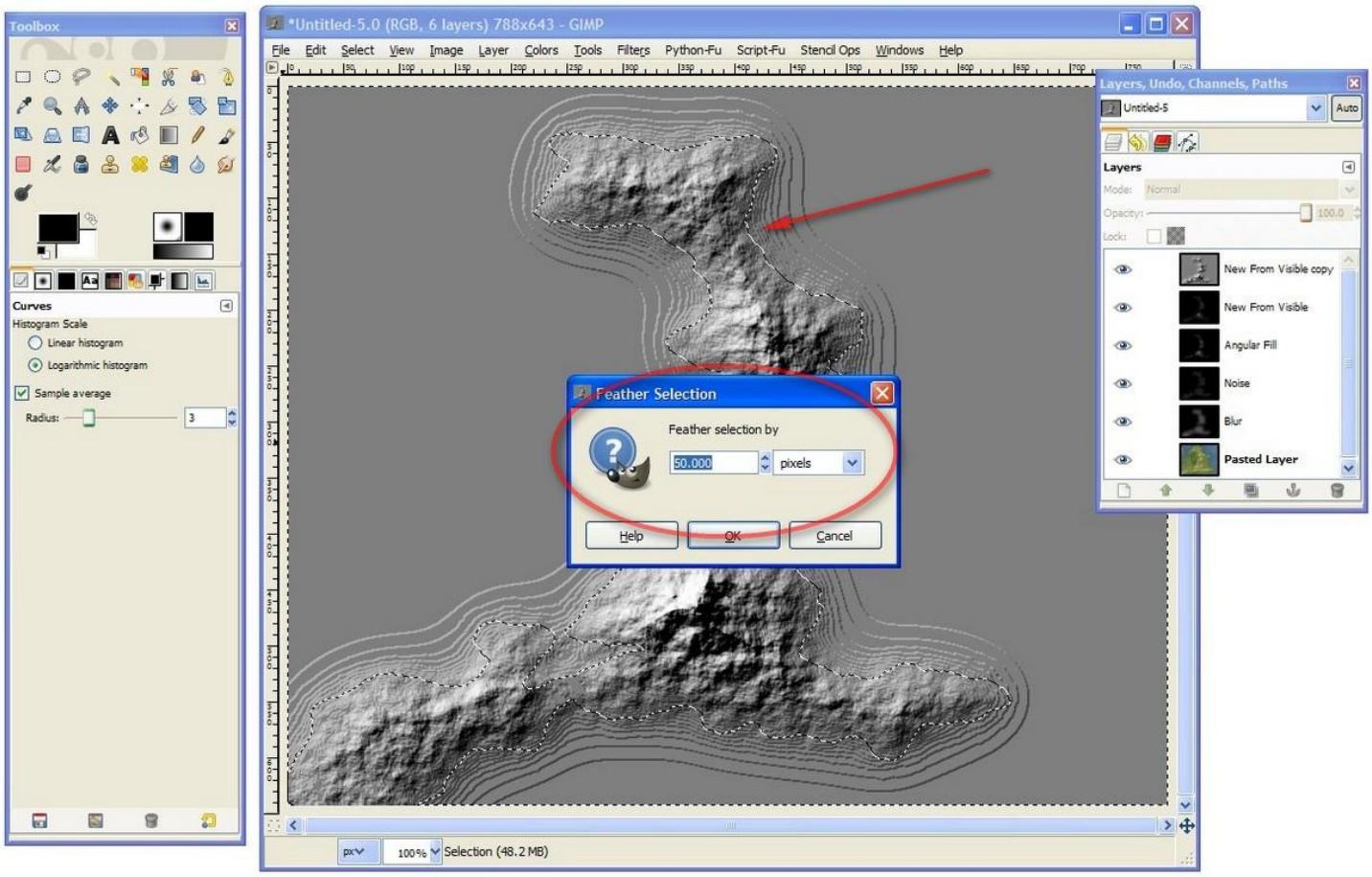
10) Use Layers > New from Visible to create a copy of the heightfield so far and use the curves tool on this new layer. (I renamed it New from Visible. It is created with the name Visible.) Make the curve like I have shown. The idea is to make it resemble the cross section of a mountain range. This is what really defines the peaks.



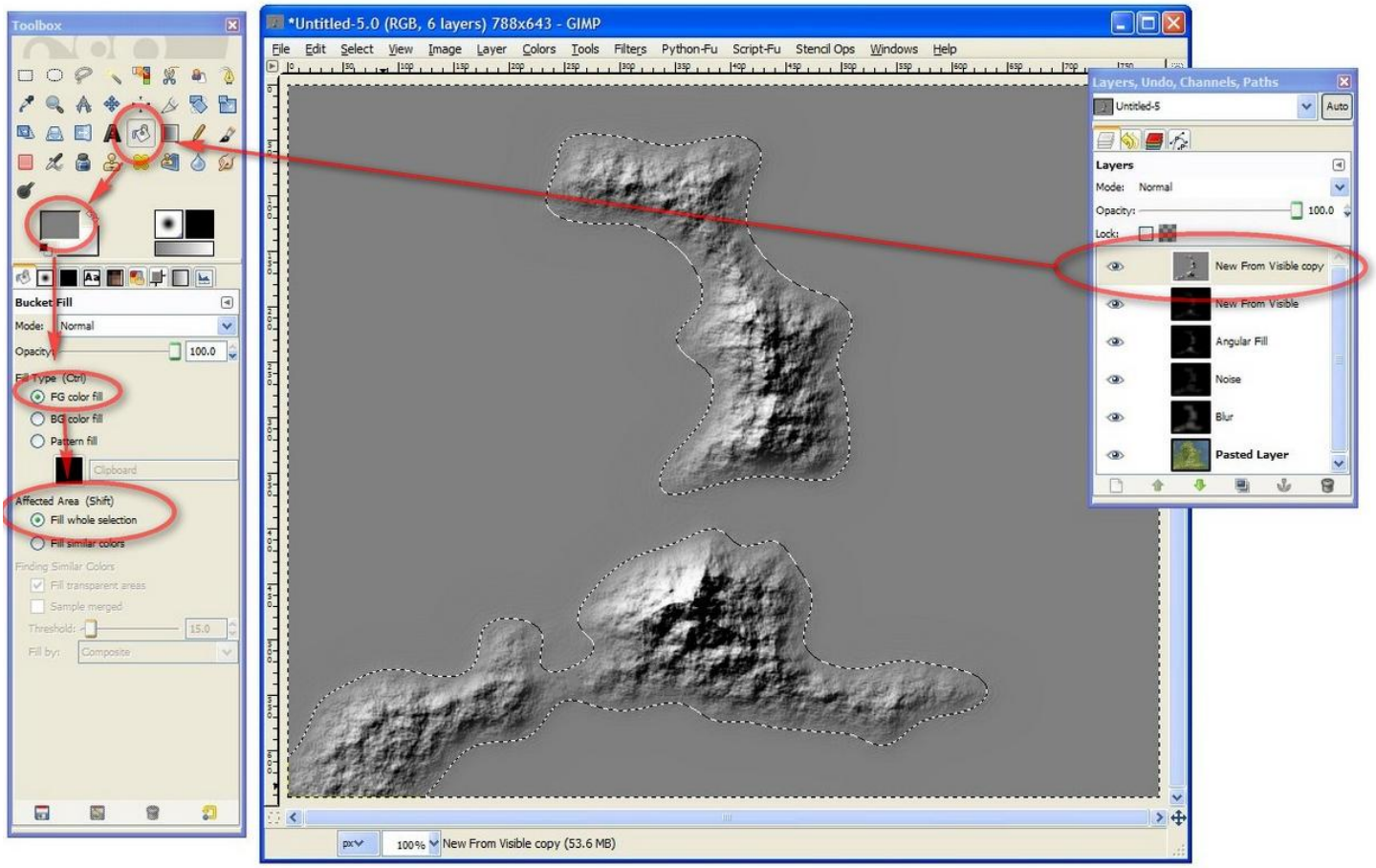
11) Duplicate that layer, and run Filters>Distort>Emboss. The Azimuth (light angle) and Depth can be what you want, but the elevation **MUST** be at 30! (This will give all horizontal surfaces a value of 50% grey – perfect for later.)



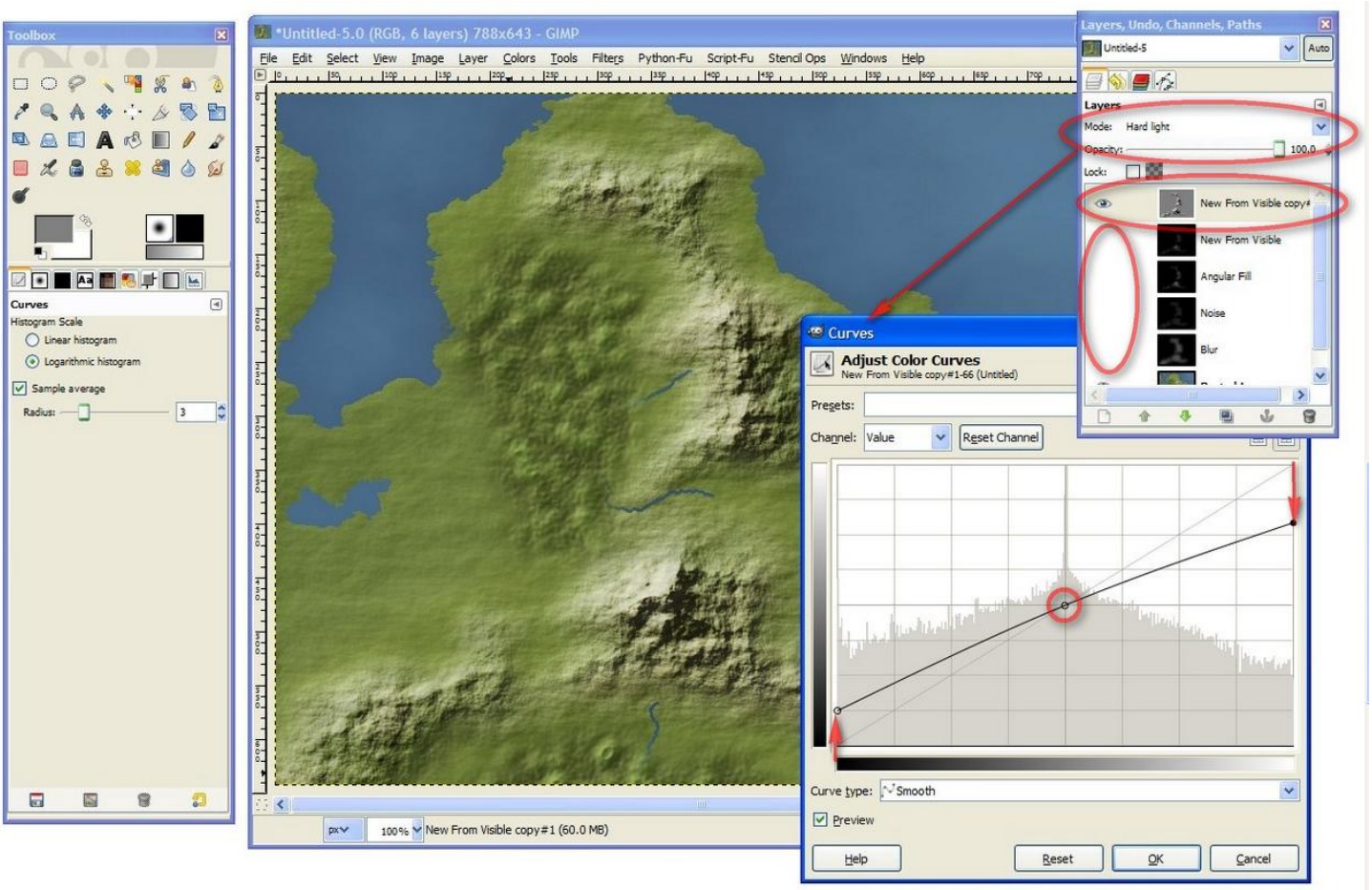
12) Load up that selection from the Selection channel. Feather it by 50 px or so, then invert it.



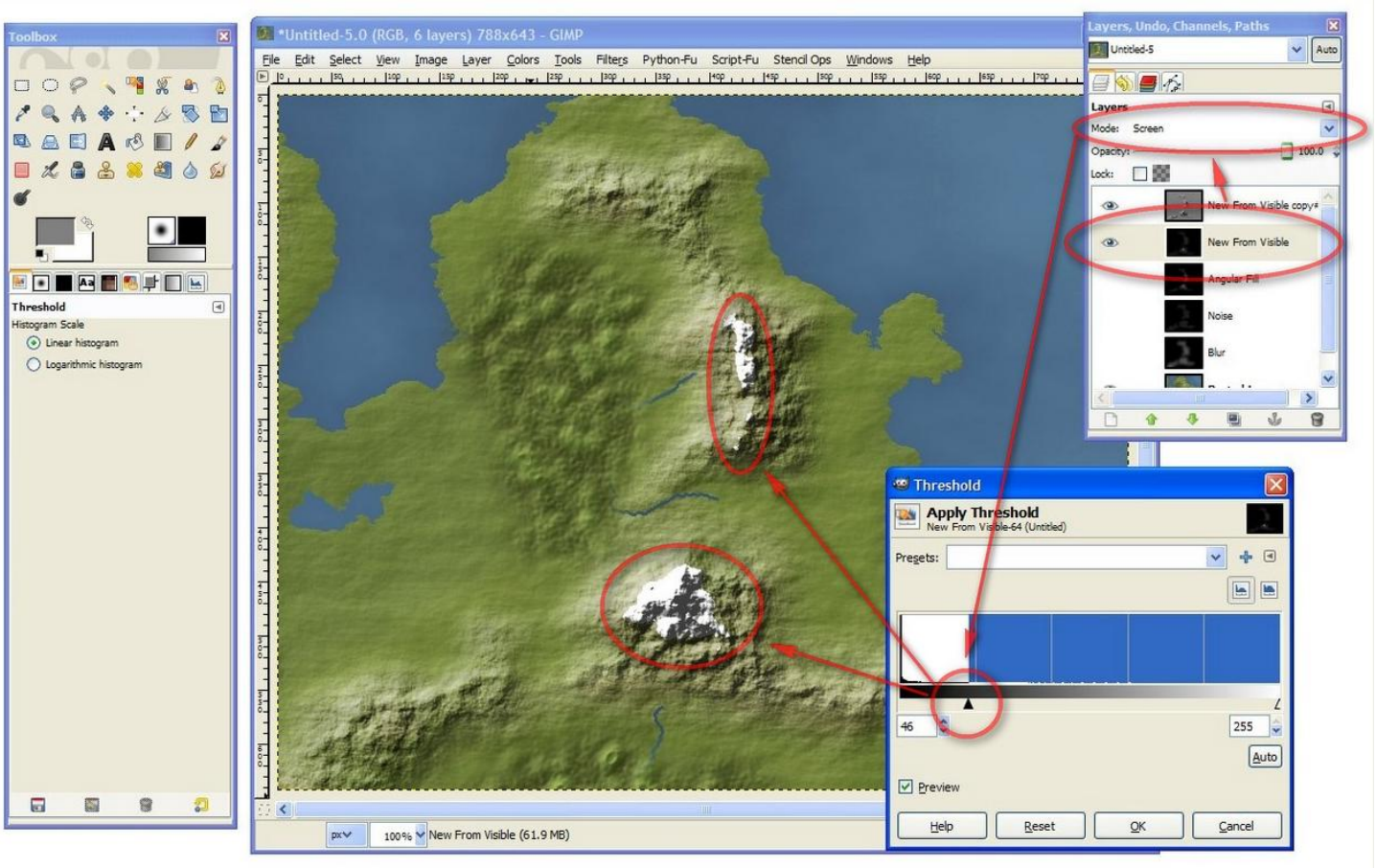
13) Making sure the emboss layer is selected (it gets unselected when you click on a channel), set the foregound colour to 50% grey and fill the layer. This will smooth out the ridges that were evident in the embossed layer in the nearly flat areas. I filled it a second time as I could still see the ridges. (It depends on what your depth was when you ran the emboss filter.)



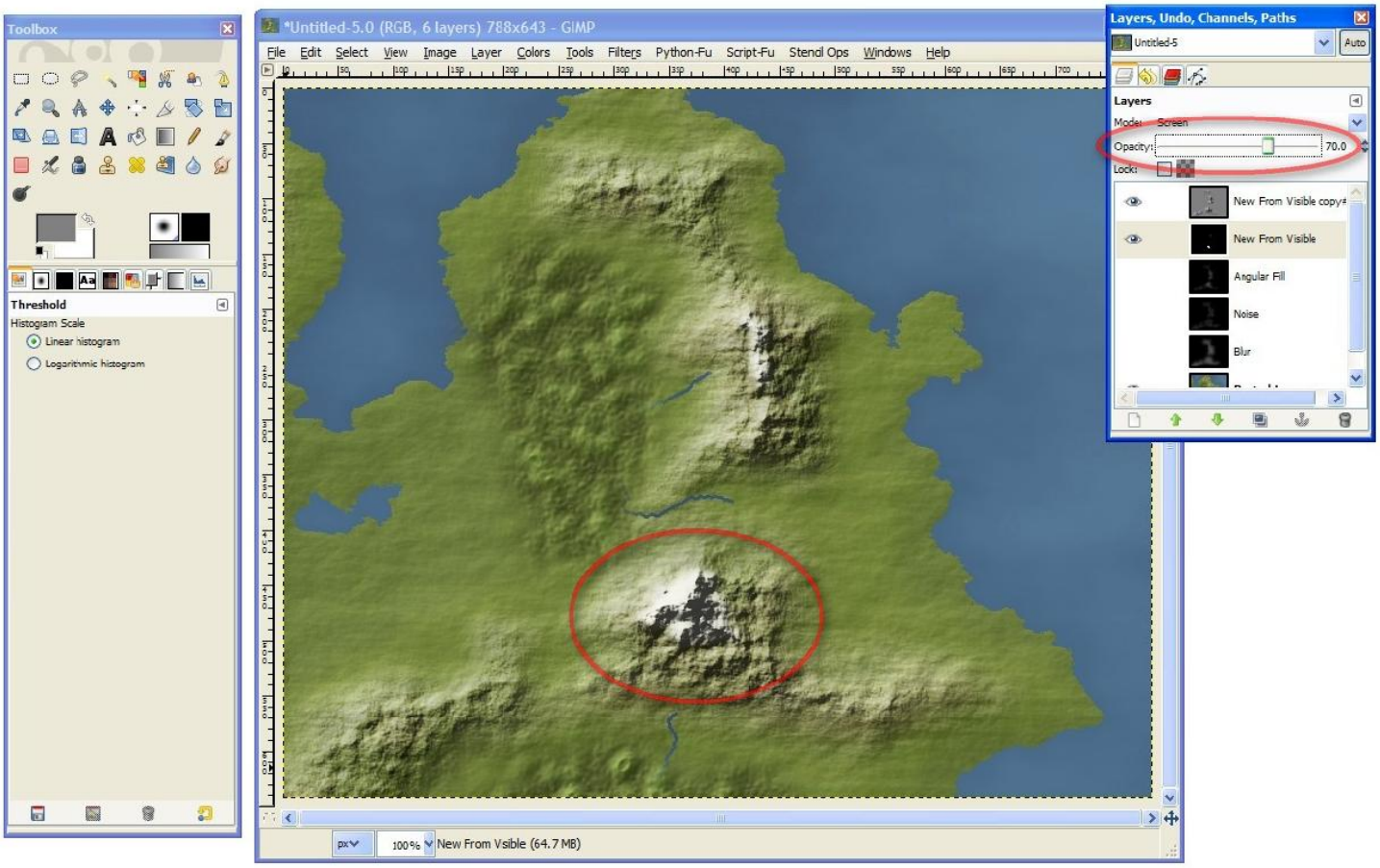
14) Turn off all the Blur, Noise, Angular Fill, and New from Visible Layers, and set the Emboss Layer mode to Hard Light (or Overlay – again, it depends on the image and colours). I wanted to reduce the contrast without effecting the 50% level, so using the curves tool, first anchor the 50/50 mark in the middle of the line with a click, then grab the black and white ends and slide them up and down respectively, keeping an eye on the result.



15) A little snow in the heights looks good. Conveniently we have a heightfield ready to use. Turn the visibility of the New from Visible layer back on, and set its layer mode to Screen. Now apply a threshold, and slide the black level up to a point where you have the amount of "snow" desired.



16) Lastly I ran a 5 px Gaussian blur on the New from visible layer, and lowered the opacity a bit.



That is it.

It is all the playing with curves and adjusting levels in the addition stack when building the heightfield that make this work OK. You could even go further, adding more layer to the stack to represent really big peaks, etc. If you wanted to make mesas, you could just allow the highlights to blow out, making the top flat!