

The great magic cabbage tutorial

Mastering 3D Graphics ~ issue #2

PhotoShop ~ Michael Kaiser

Any model people build for a project is not nearly as valuable as one that is completely textured and in the scene. After all, texturing a model gives it life. However, bringing these models to life is no easy task. Slapping an image you make in a paint program or one you find elsewhere, like on the World Wide Web, sometimes just doesn't cut it.



Understanding the environment in which your models will be is very important to designing a good texture for the whole or part of a model. I know, designing a texture seems a little intimidating. After all the time you've spent learning how to push those points and irrational splines and clients around, now you have to take into consideration color theory and lighting based on the environment in which these models will be placed for rendering.

Let's take the following example, you spent your waking hours, several sizzling mo'java curlers, cigarettes and time making the best model in the universe like the one you just completed for the best paying, nicest and perfect customer in the world. He wants a flying saucer from Roswell, New Mexico. Granted, it's been in mothballs at Area51a near Groom Lake, having to wait for scientists to figure out what makes it tick. Let's also pretend it's a fairly simple model and the universal Wayback machine can take us there to see it.

So, let's step inside, use our Wayback machine and picture it at the bottom of the ocean. What kind of texture do you put on it now? Certainly not the one from it sitting in a hanger. Now you have to take into consideration things like, lack of or intense light, rust, sand build up, coral and other calcareous build up, manganese nodules and more.

Now, with the use of our magical Wayback machine, what if this same ship was in a very industrialized hanger, waiting for the owner to come back and get out of New York City in a very fast manner because the Men in Black lost something again. You would have to deal with graffiti, smog, stray bullets and rocket damage, soot, grime, funky toxic rust that glows, rats the size of large dogs and steam damage. It's a lot to consider isn't it?

Lastly, let's hop inside the Wayback machine and look at what might happen if the elite personnel of Area51a 'lost' the ship out in the sand after actually getting it to work. An amusing premise, but an important lesson nonetheless. Now, like in the ocean, you have to deal with sand build up, but also sand blasting, wind erosion, sun bleaching and mild forms of bizarre alien rust, jet wash and smog.

As you can see, there is a lot to consider when designing a texture. And, how does all of it start? With an idea, a premise, a visual construct in your mind of what has happened in the past in order to make this appear real.

Let's start by walking around outside, away from the office. Almost every texture you will ever need is in most cases within 10 miles of your home or office. A great example of this would be what they did with "Riven". In

Cyan's book, "From Myst to Riven" you can see a photo of leather they had taken, which they used on all of places, a bed. A wall took the place of a giant water-boiling device. Using your creativity and a camera – digital or otherwise – in conjunction with a scanner, is the basis for many wondrous textures. Take for instance, your common everyday red cabbage. Simple to look at, easy to scan, annoying to clean the scanner off, but hey, it's a tool right?

Take a good look at [Figure 1](#). What do you see. Most people would answer with some wise buttock remark, but the texture gurus would look at how the white and red form layers and see potential. With just a little manipulation it might just become the best darn desert layered sandstone texture this side of the, the... well, this side of something or other. So, follow along as we start the Magical Cabbage Tutorial. I am using Adobe Photoshop 5.0, I am sure similar paint programs have comparable functions and I will make this easy to follow for most art programs.



Figure 1: In the beginning, we behold the magic cabbage.

By now, you have your cabbage image opened in Photoshop. Looks harmless enough and it makes me think of coleslaw or kim chi. First, use the Marquee tool to select an area that is fairly horizontal and copy it.

Paste this into a new work area. Continue doing this by grabbing different sections of the cabbage and putting them together like a jigsaw pattern (see [Figure 2](#)). Next, after flattening the image down, crop it and use the rubber stamp tool to make this seamless. I used a hard brush in order to make it look less blurry.

Next, apply the "Wind" filter from the Stylize submenu. I applied the wind 3 times to go from the left and then the same amount from the right. This not only smoothed out the rough curly spots, but lessened some of the harsh

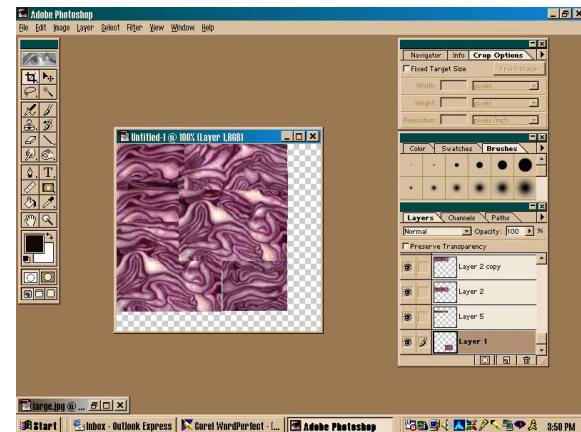


Figure 2: First up chop it up!

purple and white. Then use the marquee tool to select the area, but leave off the less desirable areas. Now define it under the edit menu by selecting the “Define Pattern” (see [Figure 3](#)).

Minimize the selected texture and start a new work area, say 600x600. Again under the edit menu select “Fill.”

Make sure that the “Use” is set to “Pattern” Opacity is set to “100%” and mode is set to “Normal” As you can see in [Figure 4](#) there are a lot of seams. Utilize the rubber stamp tool, this time with a soft brush and randomly go over the seams slowly. Rubber stamp from various areas to make sure it didn’t look like a filled pattern.

Next, add some Noise from the filter menu. I used the values of 52, Gaussian, Mono-

chromatic. However, please – I cannot begin to stress this enough – please go off and experiment. That is how happy little accidents occur (see [Figure 5](#)),

At this point, play with the Hue/Saturation settings and call it quits. This would produce an average texture. Not too bad considering it is a cabbage (see [Figure 6](#)). However, I love doing this and I am not satisfied yet.

To improve it further we need some texturing, consequently pick the Texturizer from the filters menu and select “Sand-

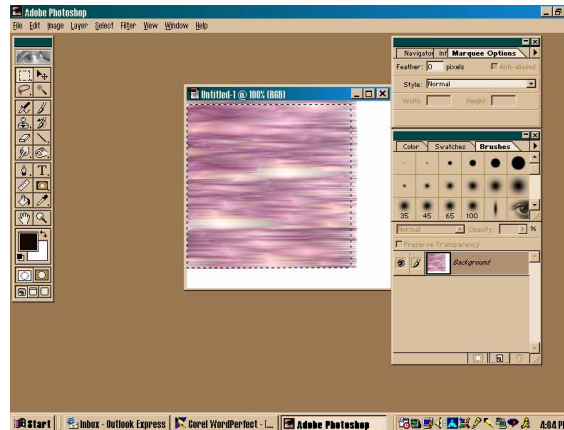


Figure 3: Blowing wind can ruin picnics, but it can make textures great!

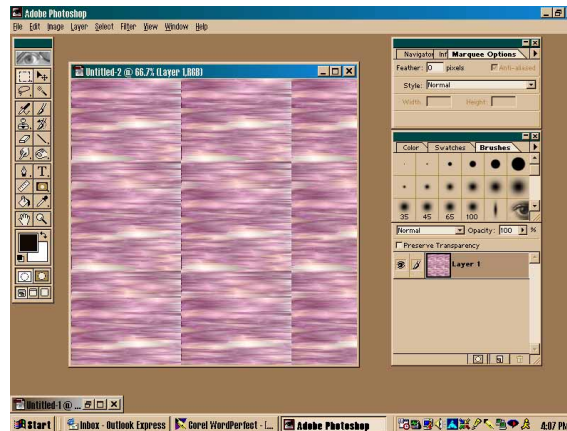


Figure 4: Houston, we have a pattern.

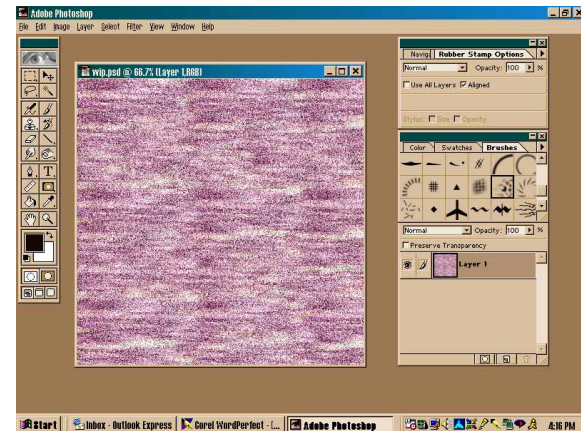


Figure 5: Rock and roll isn't noise, it's cabbage!

stone”. I set the scaling to 200 and the relief to 18 and the light source came from the bottom and was inverted. I then Faded the filter 52% and used the “Overlay” option.

From here, use the “Wave” filter which is found under the distort submenu. This will give the characteristic “layered” look I was looking for when I originally started. I used 6 Generators; Type was Sine; I used a minimum of 6 and a max of 717 for the wavelength; Amplitude was a minimum of 4 and a maximum of 17. I left the scaling both at 100% and I wrapped around the undefined areas. Then I clicked “randomize” till I saw something I liked. After applying the filter, I reapplied it a second time, having reopened the filter and randomized it a little more (see [Figure 6](#)). However, although this helped out a lot, you can see some problem areas (see [Figure 7](#)).

Again, we come back to our wonderful rubber stamp tool. I used a soft brush so it would not look hard. Then I used the “Dust and Scratches” filter,

which is found under the noise menu. I used a radius of 2 and a threshold of 124. This brought out little bits here and there, making the grains more pronounced.

Rotate the canvas 90 degrees clockwise and make a new layer called “stains”, after all, sandstone has been around for millions of years; depositing sand grains and compressing them, bleached by the sun and eroded by water. Use the airbrush, with a soft setting and opacity at 100%, to place random dark splotches of paint near the dark areas. Then use the wind filter to push the paint and make “water marks” flowing down the sandstone in the appropriate direction. If you need to, zoom in and erase, so that it is smooth to the wavy grain of the texture. Finally, return the image back to it’s upright position (see [Figure 8](#)).

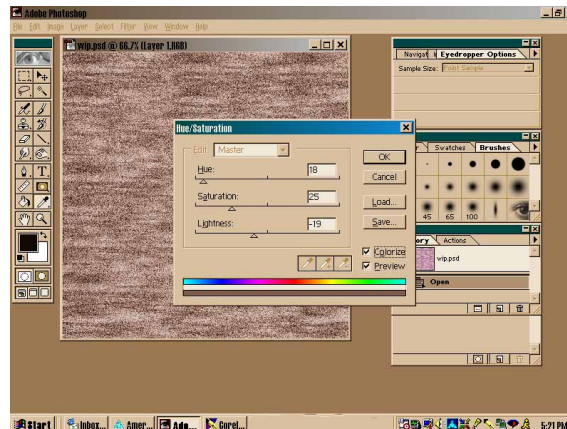


Figure 6: Time to quit? Nahhhhhh.

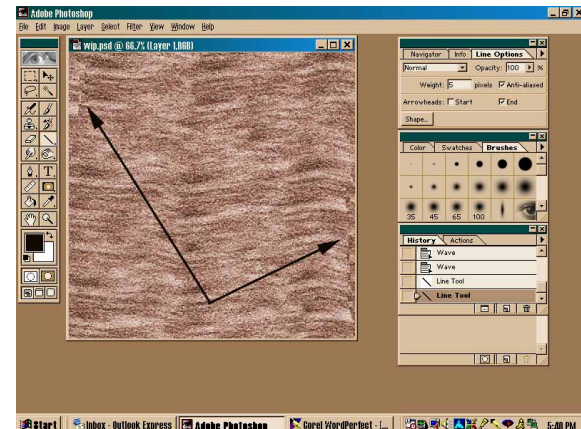


Figure 7: Ewww, problem areas. Better refer to M3DG.

From here, I used the Magic Wand Tool with a tolerance of 50. I picked a light area and then selected similar areas. I then went to Hue/Sat options and clicked on “colorize” and found myself an orange color near the same value of the base value of the image. I found the settings of 23, 53 and -7 good. As you can see with [Figure 9](#) it looks more like real sandstone. I repeated this last process until I was happy with [Figure 10](#).

To make it seamless along the horizon, I chose the “Offset” filter, set the horizon to 1/2 of the image and chose the “wrap around” option. Once again, with the magic of the rubber stamp tool I cleaned up the line that appeared in my image (see [Figure 11](#)).

Which brings us to a close. In a short time you have turned a cabbage into a sandstone texture (see [Figure 12](#)). There is a whole world of textures out there to explore.

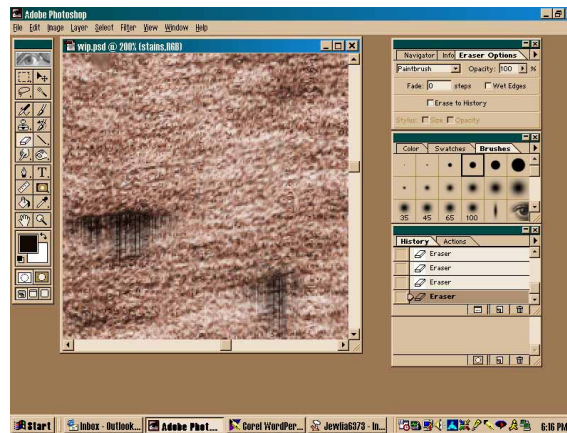


Figure 8: Water stains bring it more together.



Figure 9: Look Ma, I can color!

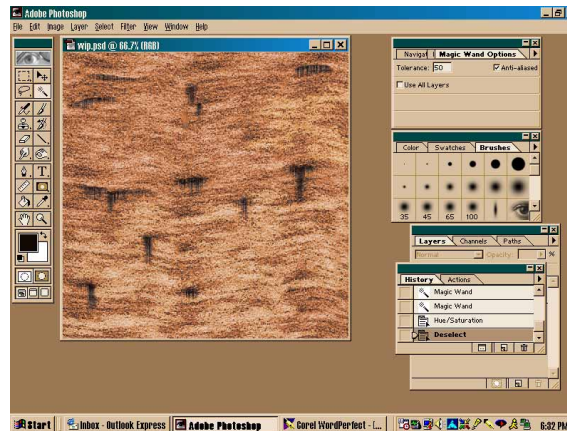


Figure 10: Ted Turner, watch out!

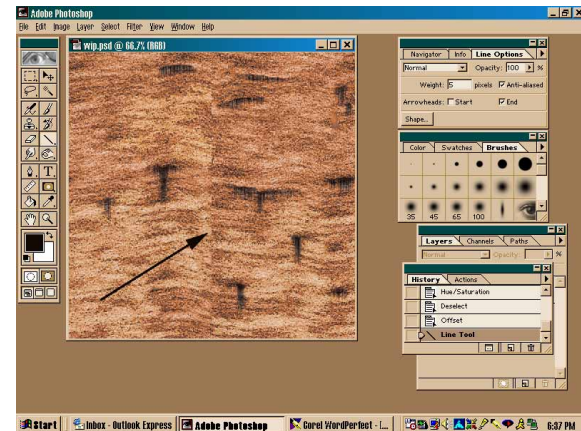


Figure 11: Almost done.

Go for a drive with your camera and have some fun.
Your only limit is your imagination.

Biography

Stardreamer Michael Kaiser is a freelance graphic 3D Artist working as the lead artist in a up and coming game. He has a strong a varied art background in traditional and non-traditional arts. With this background, he maintains a free daily texture web site. Visit him at <http://area51a.nstate.net>.

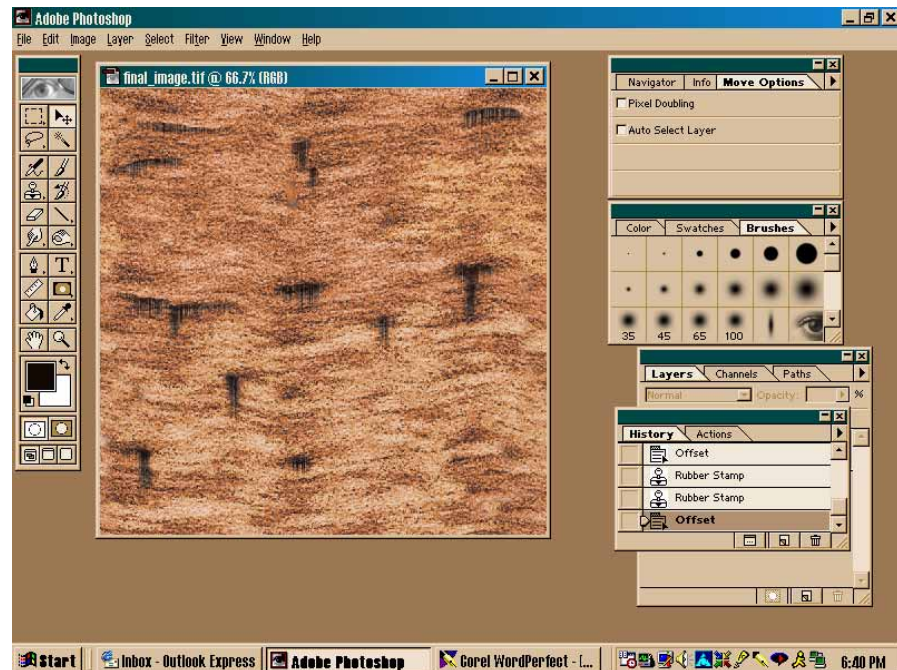


Figure 12: Finished!





Navigator Info **Zoom Options**

☐ Resize Windows To Fit

Color Swatches **Brushes**

35	45	65	100	

History Actions

large.jpg

Open



Crop Options

☐ Fixed Target Size Front Image

Width: pixels

Height: pixels

Resolution: pixels/inch

Brushes

Layers Channels Paths

Normal Opacity: 100 %

☐ Preserve Transparency

	Layer 2 copy
	Layer 2
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	Layer 1



Navigator Inf **Marquee Options**

Feather: 0 pixels ☒ Anti-aliased

Style: Normal

Width: Height:

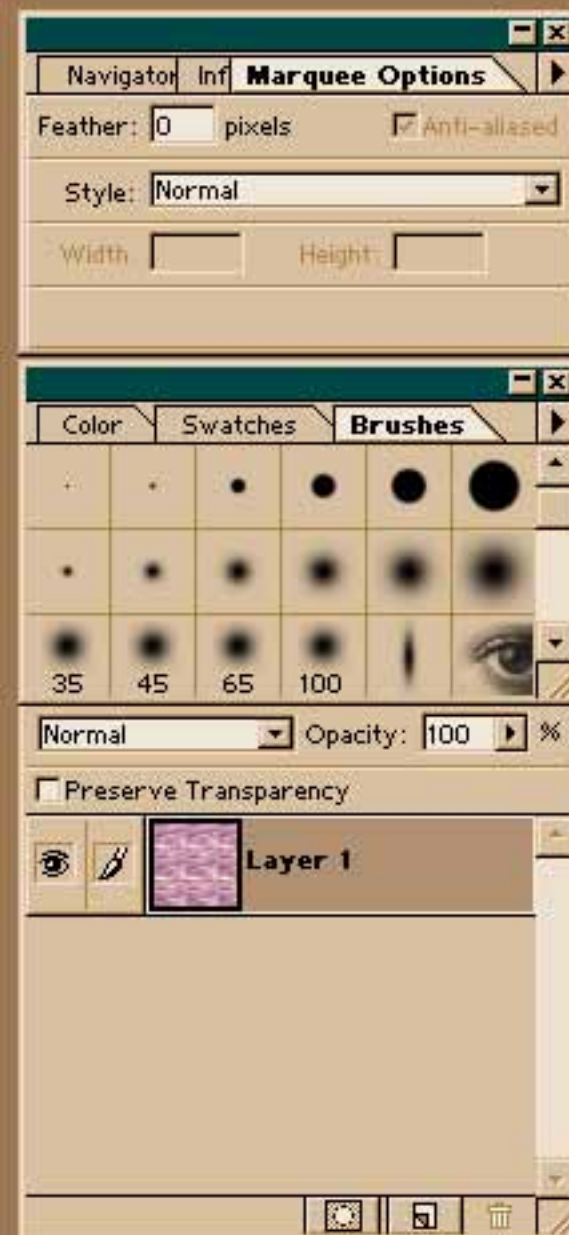
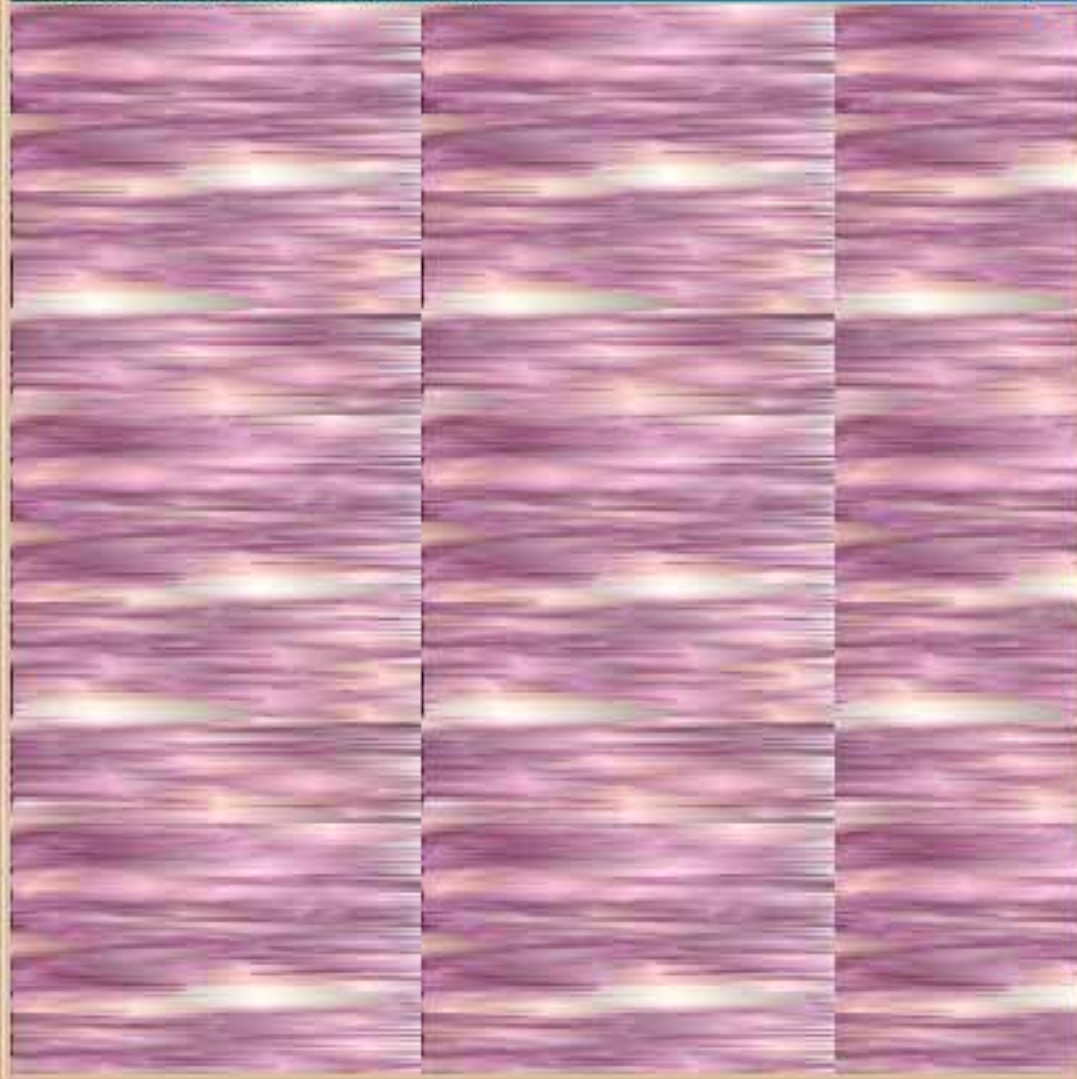
Color Swatches **Brushes**

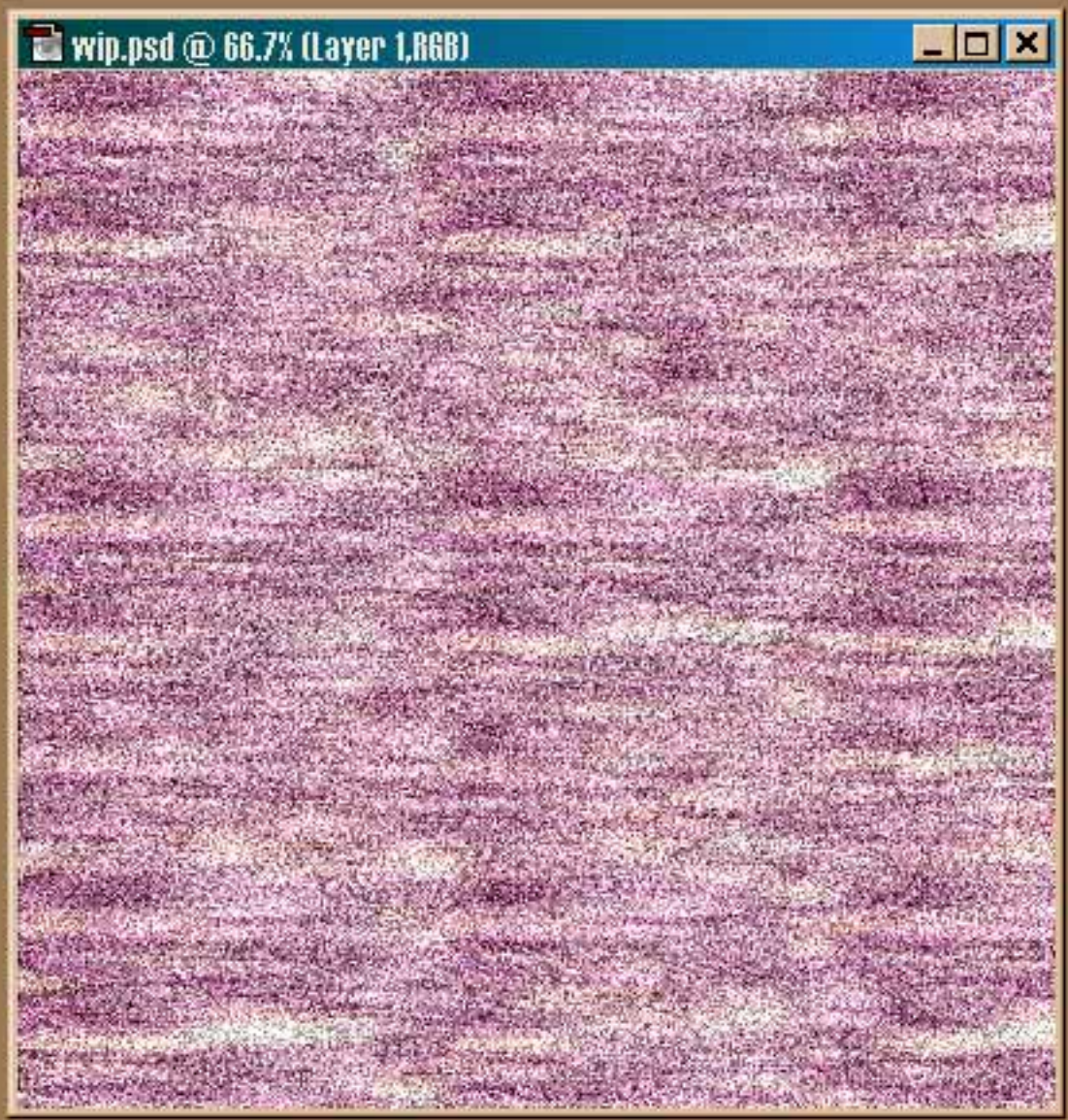
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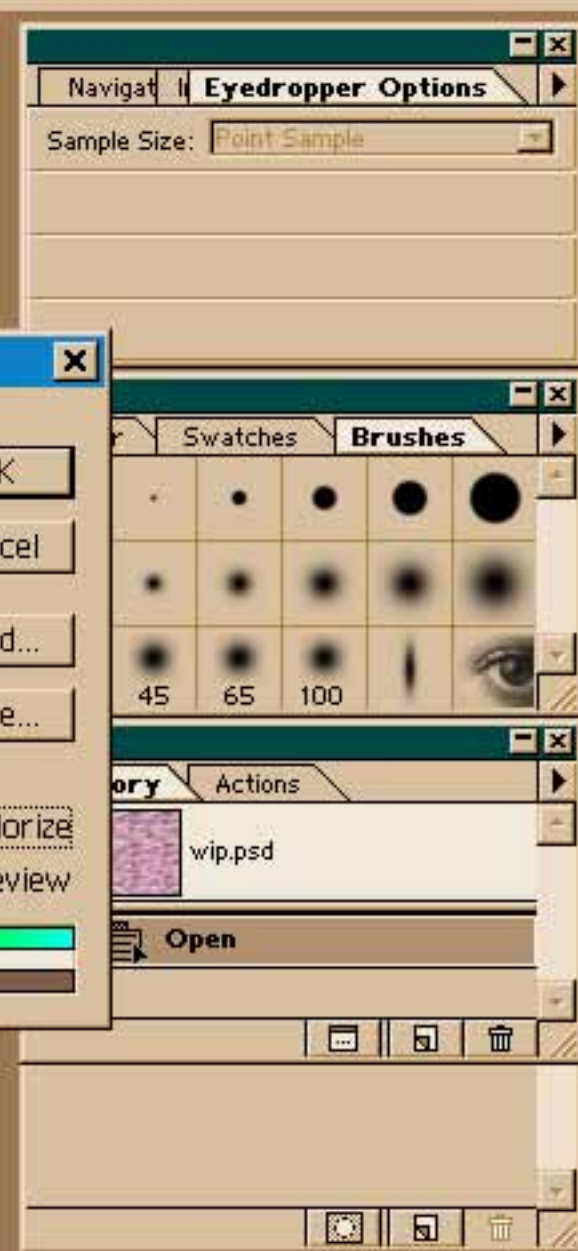
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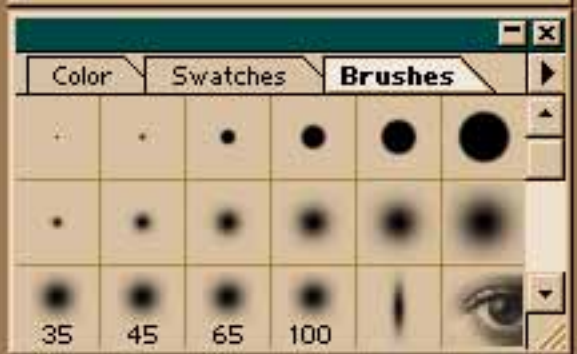
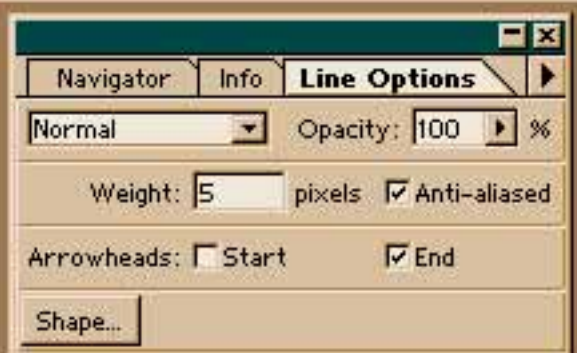
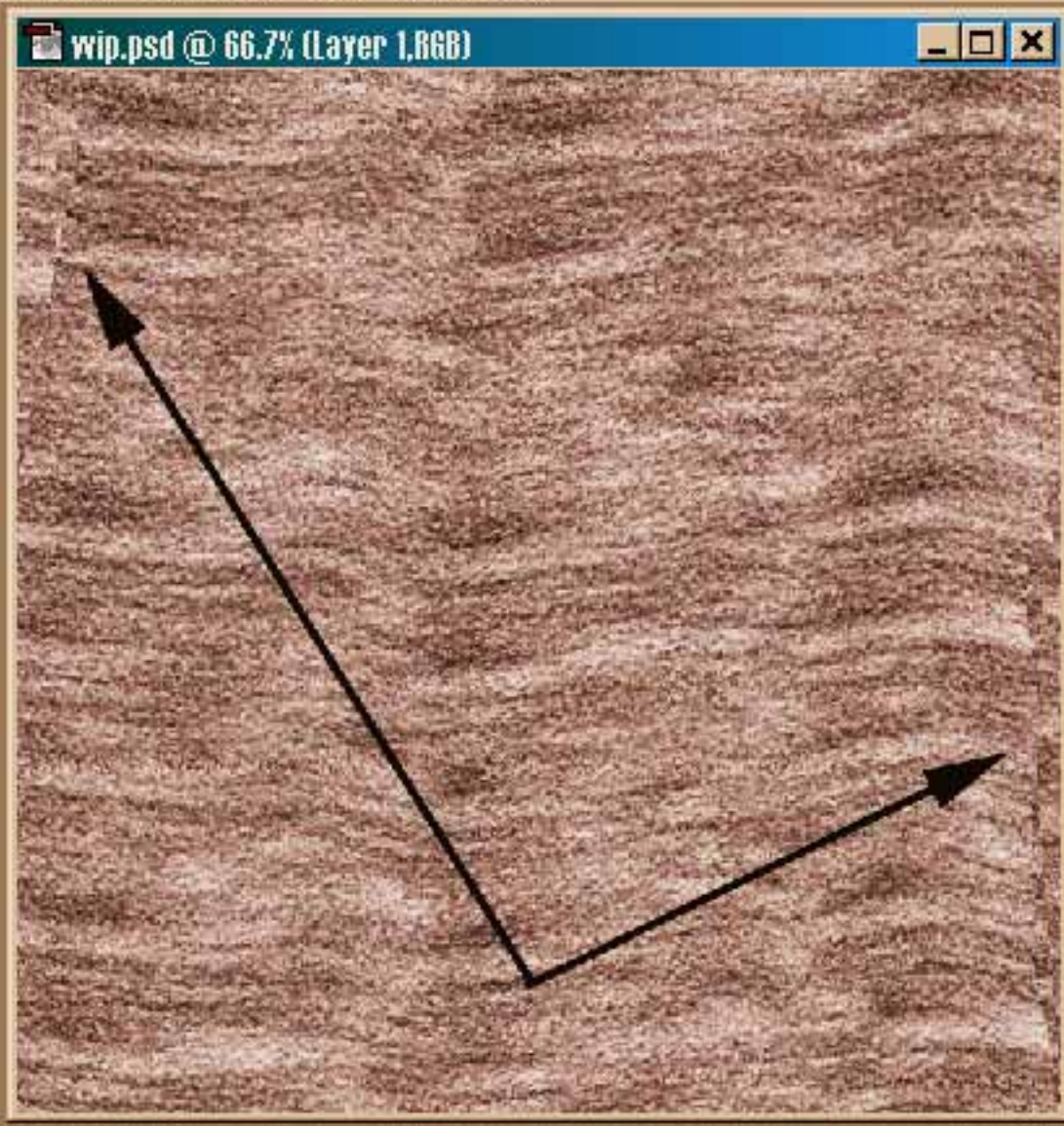
☐ Preserve Transparency

Background











Eraser Options

Navigator Info **Eraser Options**

Paintbrush Opacity: 100 %

Fade: 0 steps ☐ Wet Edges

☐ Erase to History

Stylus ☐ Size ☐ Opacity

Brushes

Color Swatches **Brushes**

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History Actions

	Eraser
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Icons: [New] [Delete] [Undo] [Redo]



Magic Wand Options

Tolerance: ☒ Anti-aliased

☐ Use All Layers

Brushes

Layers

Normal %

☐ Preserve Transparency

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