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Plug-Ins Page by Jack & Sue Drafahl

Applied Science Fiction's Digital Gem

One of the biggest problems photographers have encountered when using higher speed films has been film grain. It's true that advancements in film technology have reduced the problem, but as long as we use film, grain will always be an issue. In most cases, large grain patterns don't hurt the perception of image quality, in fact, creative images often use enhanced grain structure for special effect.



Original 35mm color negative image scanned into computer at 3072 x 2048 pixels. A zoomed-in section of the image is on the left, and the same section is shown on the right, using the Applied Science Fiction Digital GEM plug-in filter. Center image is the image navigator that shows the overall image and the cropped section in a red box.

Film grain can appear in images for a lot of different reasons. It might appear because you used small format film, high ISO films or if the film was pushed in processing. Whatever the reason may be, the grain pattern was locked into the emulsion.

Thankfully, that changed when Applied Science Fiction's Digital ICE technology was included in some of the newer film scanners. This technology trio includes Digital ICE, which removes scratches; Digital ROC, which corrects faded color and the final technology; Digital GEM, which can reduce film grain, all as the image is being scanned. These technologies were great, but only worked with certain scanners. Images scanned without the benefit of Digital ICE technology remained uncorrected...until now, that is.

Applied Science Fiction has now released Digital GEM as an Adobe Photoshop plug-in filter. Now you have help for all your images with grain problems. The plug-in filter is available for both Mac and Windows platforms and has been tested and approved for Adobe Photoshop, versions 5-7, Adobe Elements, Adobe Photo Deluxe Home Edition, and Jasc Paint Shop Pro. We took the compatibility issue one step further and found it also works with Corel Painter II and Ulead Photolmpact Editor.

Here's how the filter works. When you load a grain-laden image and select the Digital GEM filter, a large submenu screen appears, featuring several control sliders and preview images. The large image on the left is a preview that shows either before or after the filter is applied, depending on which button you select.



The before/after image is shown on the left with the after box checked. Since the highlight grain in this image was very heavy, we set the slider to 100. The shadow was not as visible, so we moved it up slightly to 66. The image was then sharpened slightly to 61.



Digital GEM menu as it appears in Adobe Photoshop. The before/after image is shown on the left with the before box checked. Notice the heavy grain structure in the sky. The image above the sliders is used to navigate your zoomed-in viewpoint.

To the right is a slightly smaller navigator image that allows you to zoom and pan within the image to get a better view,

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just like the one in Adobe Photoshop. The +/- buttons allow you to increase or decrease the viewing area, and you can move around the image with the hand icon.

There are three control sliders located just below the two preview images. The top slider adjusts the intensity of the grain reduction in the highlights, while the center slider adjusts the shadows. The bottom slider is a soften/sharpness slider that does what the name implies. All three sliders are set at a default setting of 50, which is the middle of the range.

The first time you use this filter, try adjusting one slider at a time and look in the preview window to see how it affects the image. Once you get a better understanding each slider's effect, then try combinations of filters on your image. We found that for most of our images we set the two top sliders to 70, and the sharpness was set to 50 or 60.



High speed 35mm color negative film was used to capture a parrot at the zoo. The left image shows the grain structure of the zoomed-in section of the image. The right image displays the same section after Digital GEM was applied.



The Digital GEM menu with the preview image on the left. A small button at the bottom of the image allows you to toggle back and forth to see the before and after Digital GEM effects. Slider controls on the right are set to their default of 50, and the thumbnail navigator screen is displayed at the top of the menu.

We also tested this filter on digital images with digital grain, or noise from high ISO speeds. The results were very impressive. Who said that this filter was only for film photographers?

To achieve the best results when editing with this filter, you should use an editing system with a very high resolution screen, typically 1600 x 1200 or higher. That way you don't confuse pixels with grain particles, and you can easily see the effects of your correction.

If you want to take the Digital GEM filter for a test drive, you can download one from the wwwASF.com website. Once you decide that this is the filter for you, for \$79.95 you can download the real thing.

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