Example 6: A Rare and Historic Old Polaroid

I made (I've never liked the phrase "taking" pictures—I don't take' em, I make' em.) this Polaroid photograph (Figure 10-6-a) as a teenager more than 40 years ago. What makes it historically interesting is that it's a portrait of the world-famous physicist, Dr. Richard P. Feynman. What makes it rare is that it shows him with a mustache, a short-lived "look" for the brilliant scientist. For those reasons, I wanted to make minimal changes to this photograph when I restored it. I did not want to obscure or alter some detail that might be of importance to a future viewer.

Where the lacquer didn't sufficiently protect the silver from oxidation, the Polaroid had turned yellowish, but that hadn't gotten so bad yet that it substantially altered densities. Since the blue channel didn't provide any detail that wasn't in the red and green channels and it was the one that showed the color shift most strongly, I used the Channel Mixer to combine equal parts of the red and green channels to make a new monochrome image, just as I did in Example 1 (Figure 10-1-d).

Next I cleaned up the white spots, which were places where the Polaroid image hadn't transferred to the receiving sheet when it was made. I did that using the Dust & Scratches filter, set to a radius of 7 and a threshold of 12, and assigned to the History Brush. The reason I

Fig. 10-6-a This 40-year-old Polaroid photograph of Dr. Richard P. Feynman sporting a mustache was made by the author as a teenager. It has faded and needs restoration, but because it has historical value I want to alter the image as little as possible.


Fig. 10-6-b This grayscale scan is a mix of 50% red and 50% green channels. It has good tones, but it lacks contrast, as shown by the histogram in Figure 10-6-c.

used that high threshold was to make sure that the Dust & Scratches filter wouldn't alter any of the grain in the photograph.

I used the History Brush in Darken mode to paint out the white specks. The background was out of focus, and the filter hadn't changed any of the grain in the photograph, which allowed me to use a very-large-radius brush to eliminate all white specks in the background with only a few strokes. There was no fine image detail there that I had to be worried about obliterating.

Now I had a pretty clean photograph (Figure 10-6-b), but the contrast was flat, and it didn't have good blacks. The histogram in Figure 10-6-c,
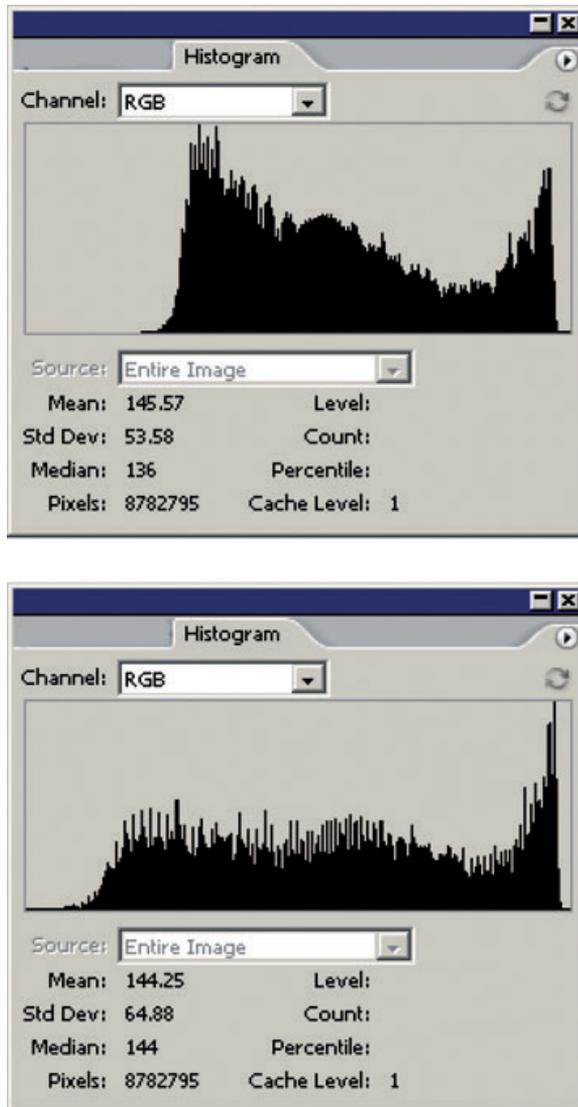
Fig. 10-6-c The top histogram, for Figure 10-6-b, shows that the whites are pretty good, but the blacks are substantially lacking in density. That leads to the correction curve in Figure 10-6-d. Applying this curve produces Figure 10-6-e, whose histogram is shown in the lower figure here.

top, showed that I wasn't using the lower 25% of the tonal range effectively, so I applied the curves in Figure 10-6-d. The adjusted photograph (Figure 10-6-e) looked a lot better, with the histogram in Figure 10-6-c, bottom. That's a much better distribution of tones.

Overall, though, I felt the photograph was a bit harsh; and had that "amateur look" characterized by poor tonal separation in the highlights and shadows. The shirt in particular looked blown out. It was time to use Photoshop's Shadow/Highlight adjustments (Figure 10-6-f; see

Fig. 10-6-d In this Curves adjustment, I've pulled the black point way in to improve the tonal range in the photograph. I bowed the curve upward to maintain midtones at the same level because they looked good in Figure 10-6-b. The result is Figure 10-6-e.
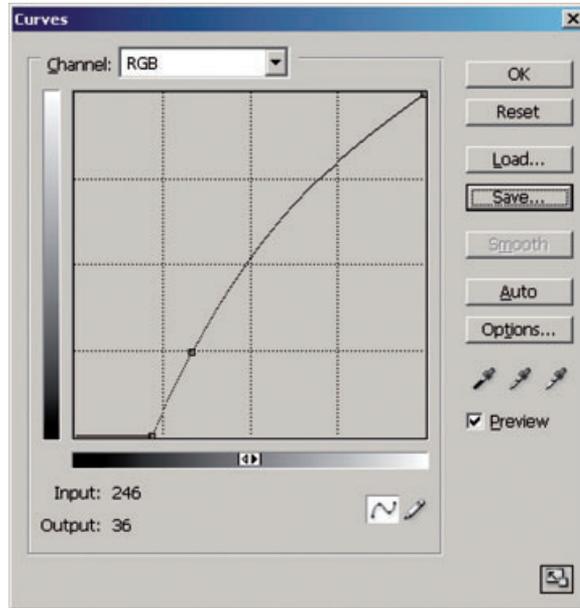

Fig. 10-6-e The tonality is considerably improved, but I'd like the detail in the highlights and shadows to be a bit better. I can enhance this with the Shadow/ Highlight adjustment (Figure 10-6-f).

Chapter 5, Restoring Tone, page 145, for a full explanation of how to use this tool). I set the Shadow Amount at 24% and the Tonal Width to 16%, to restrict the change to the deepest shadows. I added just a bit of highlight correction—only 5% over a Tonal Width of 29%—but even that small amount made a big difference in the results, as you can see in Figure 10-6-g. Shadows are opened up, there's much more detail
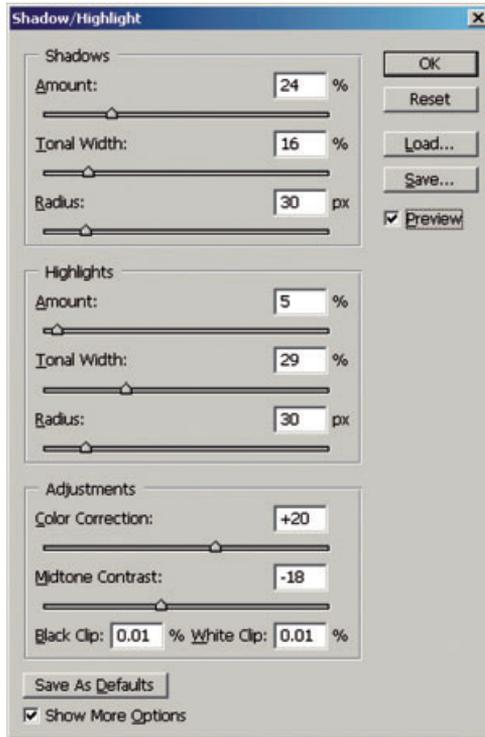
Fig. 10-6-f This Shadow/ Highlight adjustment produces Figure 10-6-g. I applied a substantial amount of shadow adjustment, but I kept the tonal width small, so only the darker shadows were affected. I added in a little bit of highlight adjustment to improve detail in the shirt and dropped the midtone contrast substantially to give the photograph a more pleasing, linear tonal scale overall.

Fig. 10-6-g The improvements produced by the Shadow/Highlight adjustment in Figure 10-6-f are subtle, but they make the photograph look noticeably better than Figure 10-6-e. Highlight and shadow detail are definitely improved.

Fig. 10-6-h The tone- and contrast-enhanced photograph is fairly grainy, as can be seen in the left figure. I used DIGITAL GEM to suppress the grain without sacrificing fine detail (right).

visible in the shirt, and the overall tonality looks a lot smoother and more professional.

I could have stopped at this point, but I wanted to see if I could suppress the grain in the photograph a bit. This was a small (less than 3 inches long) photograph made on Polaroid 3000 speed film. Consequently the photograph was grainy to begin with, and correcting and enhancing the contrast only accentuated that (Figure 10-6-h, left).

Because of the historical value of the photograph, I didn't want to do any grain reduction that would reduce image detail in the slightest. After experimenting with the blurring and noise reduction filters in Photoshop and Picture Window, I concluded that the best way to suppress the grain without destroying any detail was with a third-party plug-in. Two that did a good job on this photo were PixelGenius's PhotoKit Sharpener edge-protected smoothing brush and Kodak's DIGITAL GEM (Figure 10-6-i), discussed in Chapter 3, Software for Restoration.

I went with GEM. The settings were the default ones except for blending, which I reduced to 55%. (I could have accomplished the same thing by applying the filter at full strength and fading it back to 55% afterward.) This softened the grain without compromising image detail (Figure 10-6-h, right).

As the finishing touch, I burned in the sky and the background along the right edge with a 5% highlight burn. That darkened those areas just enough to direct the focus of attention onto Dr. Feynman (Figure 10-6-j). A subtle change, but one that substantially improved the composition for me without compromising its accuracy.

Fig. 10-6-i The DIGITAL GEM plug-in, shown in this screenshot, substantially softens the grain without destroying fine detail.

Fig. 10-6-j This fully restored photograph looks much better than the original Polaroid print in Figure 10-6-a, and I achieved these improvements without changing any important details in the photograph. The restoration looks much better than the original, but it is still historically accurate.