

**PROFESSOR:** OK. We're going to get a little bit more detail about how to sharpen images. Here's microfluidic devices that we saw before in the flatbed scanner section. I cropped a larger picture, and as we zoom in, we're actually seeing some Newton rings, which we're not loving, but let's pretend that they're not there. You know that we're going to get Newton rings when you put glass on top of glass, or-- this is PDMS, which is also going to give us some Newton rings. So let's just take an area, maybe around here, just to pay attention. I'm going to zoom in a little more. Your eye should focus around here and around the numbers, and maybe over here.

To see what happens when we sharpen, we go to the Filter, we go down to Sharpen, and use Unsharp Mask. There are all kinds of things, but for our purposes, Unsharp Mask is the way to go. And it was already set at 128 once before. Let's go down to almost very little sharpening, almost kind of the original image. And watch as I increase the amount of sharpening. You're seeing more and more getting sharp.

But, unfortunately, what also happens is you get a lot of, the dirt is sharpening as well. And we'll discuss that in a moment, a little bit. But we're going to go at length about cleaning images. For example, if I accepted this with 228, which is considerably sharper than before-- let me undo it with Command-Z. That was without sharpening. That's with sharpening. I hope you're seeing. Look over here now. Without sharpening. With sharpening. So we're getting some real clarity here, which I think is what we want to show. But, as I said, we are also getting some junk, which, if I decided to get rid of, let's say with the Healing Brush. Little bit here. Get rid of this. Get rid of this. This is making the image cleaner.

And the question is, am I permitted to do this? And we're going to have a very important deeper discussion about how much we can, in fact, enhance scientific images. For the time being, let's leave it at this. And we're going to save the image and clearly indicate this has been sharpened. And that's it. There you go.