

Levels, Curves and Brightness and Contrast

Subject: Controlling an Image's Tonal Values.....

What means "Tonal Value"

How white, how black,

and for grays, how far from Black or how far from White is the gray.

AND how do we control where these values are.

At some level, all effects can be (mostly) achieved with any of these controls, **BUT**

They are all different

With different kinds and amounts of control

With differing EASE of use

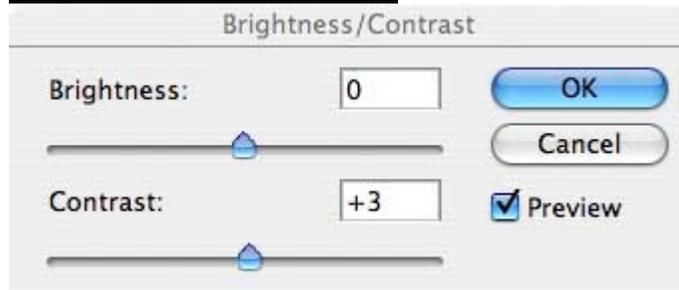
So the Question is: What do each of these do - well, what do they do - easily, but mostly, How do they work?

First: Where are these controls:

Pull down menus: Image/Adjustments/.... Levels or Curves or..

Or what I do: Layer/New adjustment Layer/....Level or curves or

Brightness/Contrast Control



The easiest control, most Intuitive

Like controls on your computer monitor, or TV set - simplest to imagine.

Contrast Slider - Increases or Decreases the Contrast about the middle gray

- May sacrifice (saturate) the Black and White endpoints (if there are picture samples at the bottom and top of the histogram)

Brightness Slider – Lightens or darkens the whole image (linear slide of Gray Scale)

Every tone value in the image is increased/decreased the same amount

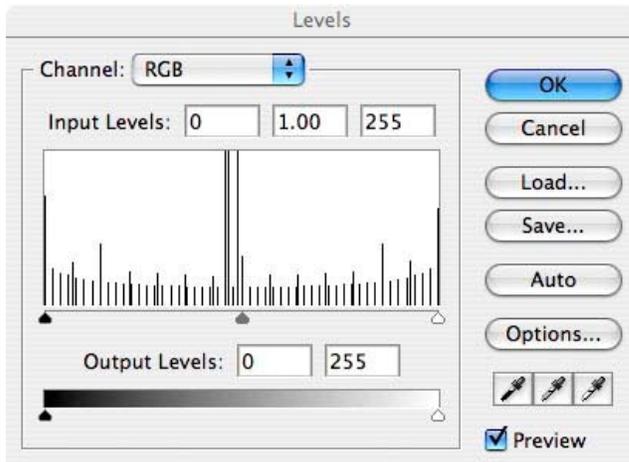
Caution – Saturation may occur in blacks or whites

Tips for all adjustments & Dialog boxes:

- The Alt (Option - Mac) will change the cancel button to Reset (the adjustments go back to "0")
- Curves and levels adjustment Layers/values may be saved
- View both the histogram and the image to judge effects

Levels:

The easier – and very effective – global control



The levels control can do 90% - 95% of all images - Optimally. Needs the user to understand Histograms (or Not – just look at the image)

Using the Histograms: Think of the Photoshop main Histogram as the “Output” and the “dialog box histogram” as the Input Image histogram...

Levels dialog box:

Black slider - slides Black set-point along the image histogram

White slider – slides the White set-point along the image histogram

(Very similar to Exposure control in RAW converter)

Gray slider – Picks a new point for middle gray

- stretches and compresses Whites and blacks as appropriate

- Will **NOT** induce saturation at the end points

Levels dialog box – Plus Alt key (Option key on MAC)

Click on Black slider + Alt key - Shows any black saturation in the image

White slider + Alt key - Shows any white saturation in the image

Eyedroppers:

Set Black Sample – Image sample - makes it True Black

Set Gray Sample – **DOES NOT SET** Gray Intensity Point

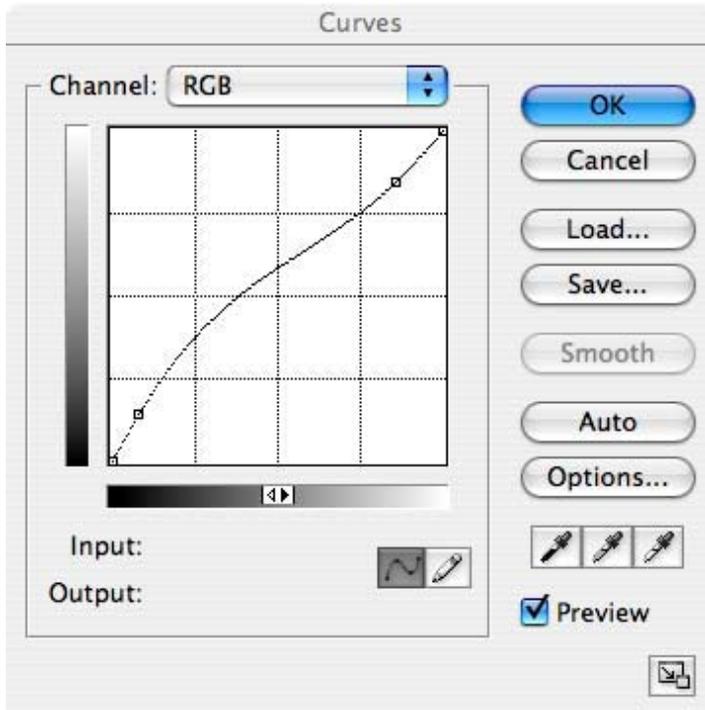
– It sets Color balance to **Neutral** at the sample point!!!!

Set White Sample - Image sample - makes it True White

If curves seem too vague, spend a lot of time with the **levels** control on different images, to see effects.

Curves:

Probably the most difficult conceptually



The Curves dialog box allows for complete (global) control of
Black stretch or compression
White stretch or compression

The rule is:

The steeper the curve, the higher the contrast (Stretch)

The flatter the curve, the lower the contrast (compress)

Click any point on the curve and move that point! And, the curve tracks.

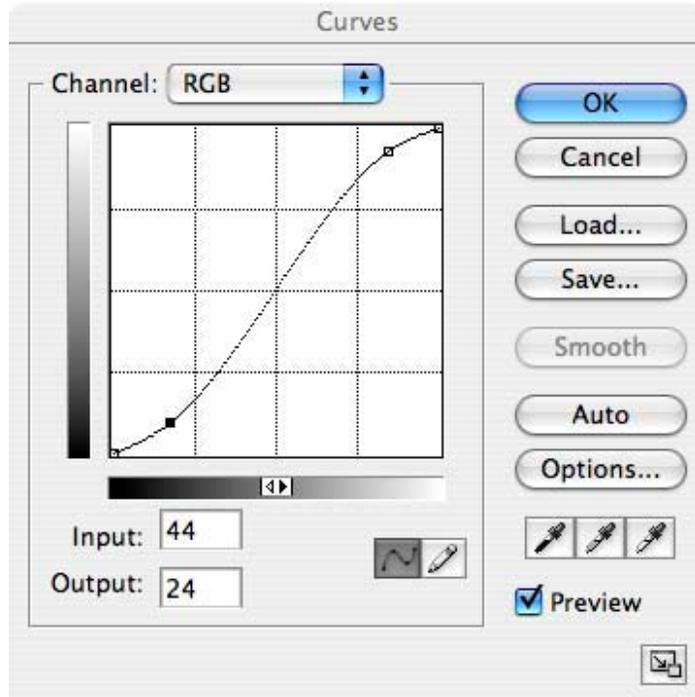
This (above) box shows Black and White - Stretched

Meaning, it increases the contrast in the Black and the White

This curve also compresses the contrast of the Gray

The curve box is input value on the bottom scale, and the output value on the vertical scale, it is a map of the input pixel values to output pixel values.

The below box shows Black and White compressed (lower contrast)



This reduces the contrast in the Blacks **and** the Whites
This increases the contrast in the middle grays

A curve shaped like this is very much like FILM, specifically Negative FILM. (for Prints)

Curves Tips:

Expand the Curves dialog box by using the grow box in the lower right.

Alt + click in the grid area to show additional grid lines

To find the spot on the curve for a certain image tone (color), Ctrl+click on the tone (color) in the photo. A point for that tonal value (color) will appear on the curve

CTRL key in the image area to set points on the curve.

Control + Tab moves you from one point to another (shift cycles in the opposite direction).

Shift -click multiple points on the curve to move them all at once.

Alt-control + M brings up the curves dialog box with the previous settings already entered.