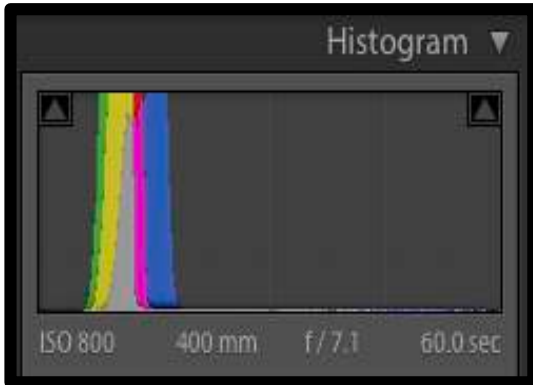


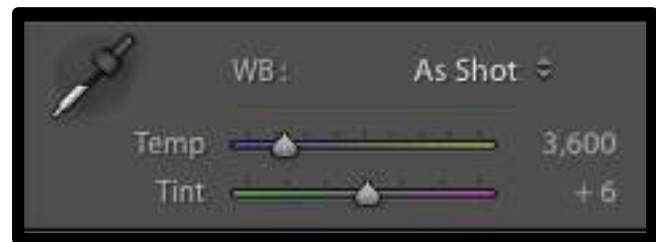
# Astrophotography Editing in Lightroom 6

A brief overview of the most commonly used elements of Adobe Lightroom 6 when editing astrophotography.



The **Histogram** is a graph showing the amount of pixels at any given level of brightness in the image, ranging from pitch black at the left side to pure white at the right side. Various colours show the primary red, green, and blue colour channels as well as where they overlap. The end result of editing should usually leave the histogram “stretched out” across the spectrum, rather than being condensed into a small portion of it as is shown in the image at left.

**White balance** is especially important when dealing with astrophotography, as we want to get the sky as close to a grey colour as possible rather than having an orange or blue tint. This can be done manually by adjusting the temperature and tint sliders or



automatically by using the eye-dropper tool (left in the above image) and selecting an area of the image that we know should be a neutral colour (such as a white observatory dome or the sky).



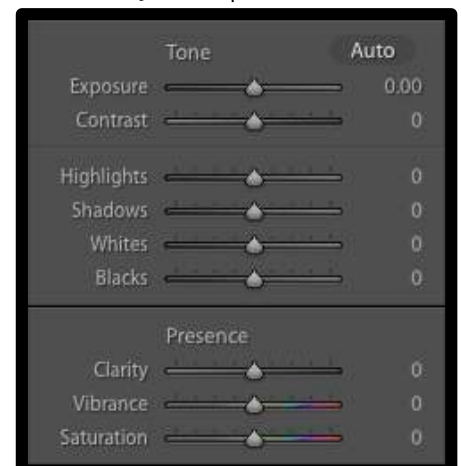
Left to right in the toolbar (image at left): **Crop tool:** Use as you would in any other program.

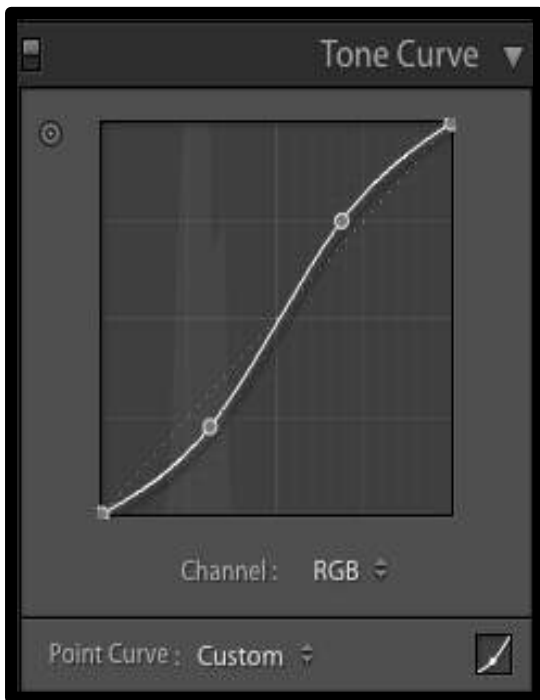
**Spot healing/cloning:** Click on an area of the

image and drag to replace it with the area that you drag to. **Red-eye removal:** Never used for astrophotography. **Graduated Filter:** Allows you to make almost all of the same adjustments you would in the **Basic** editing tab but in a gradient fashion on the image. Click to define origin point of gradient and drag to determine direction and softness of gradient. Great for editing landscape astrophotography. **Radial Filter:** Essentially the same as the Graduated Filter, but in an elliptical fashion (can be used to apply adjustments to the entire image outside of the elliptical selection or to only the area of the image inside the selection by checking the “Invert” box in the filter menu. Very useful when editing elliptical objects such as galaxies and planets. **Adjustment Brush:**

Essentially the same as the Graduated Filter or Radial Filter, but instead allows you to paint the area of the image that you’d like to apply the adjustment to.

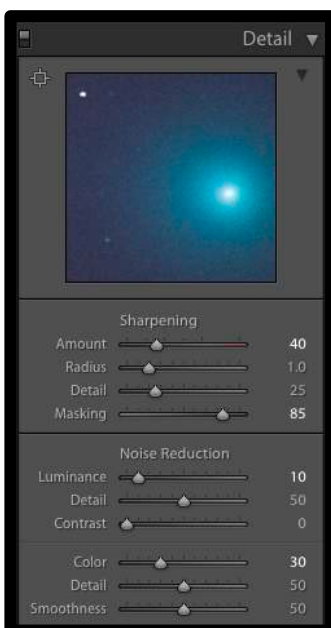
The **Basic** editing tab contains the sliders in the image at right (as well as the White Balance section). These are fairly self explanatory and can always be reverted to their original positions if the adjustments don’t turn out as desired, so be sure to experiment with these to get a feel for them. **Clarity** can be extremely useful in defining details in images, but one must take care not to overuse it as it can give a very “forced” look to an image (compare the image with it set at 0 and 100 and you’ll understand).





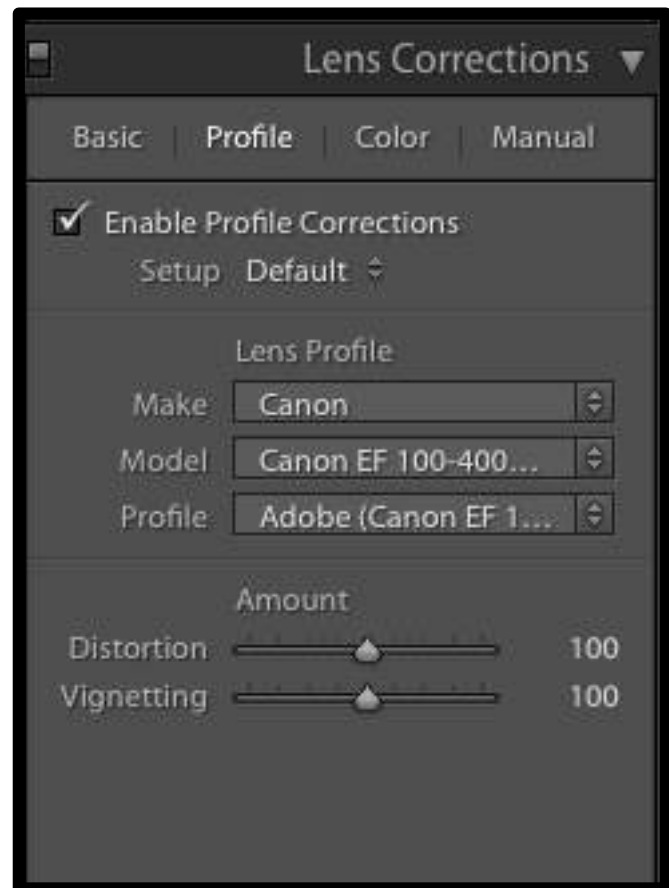
Within the **Tone Curve** is a square version of the histogram presented on the previous page (or above when looking at the Develop module). Clicking on the line allows you to place a control point which can be dragged along the line or up and down to adjust the level of exposure at each zone of brightness in the image, depending on the location of the control point. For example, in the image at left is a standard “s-curve” utilizing two control points. One is placed near the bottom third of the line and is dragged down slightly, thus darkening the shadows of the image. The other is placed near the top third of the line and is dragged up slightly, thus brightening the highlights of the image. This overall adjustment increases the contrast of the image, and is one of the most frequent types of adjustments made to the tone curve when editing astrophotography images.

The **Split Toning** tab (not pictured) is most often used for stylizing ordinary photographs and is just about never used in astrophotography. The tab pictured at right is **HSL/Color/B&W**, the most frequent of which you’ll be using for astrophotography is **Color**. This allows you to adjust the hue, saturation, and luminance of each colour in the image individually, and can be useful particularly in bringing out the colours of nebulae to help them stand out from the sky or to adjust certain colours without changing the white balance of the image.



The **Detail** tab pictured at left is where sharpening and noise reduction are done. The main sliders that are going to make a noticeable difference for astrophotography are **Amount**, **Masking**, **Luminance**, and **Color**. **Amount** affects the amount of sharpening done on the image. Holding the Alt (Windows)/option (Mac) key while moving the **Masking** slider allows you to visualize which parts of the image are being sharpened by providing a black & white overlay of the image, with the white parts being the areas of the image that are being sharpened. When masking is set to 0, the entire image (including the noise) is being sharpened, and so **Masking** should be dragged to the right until only the details of the image that we want are being sharpened (and thus all of the noise should appear black in the **Masking** overlay). **Luminance** reduces the luminance noise of the image (bright/dark), with the higher numbers indicating a greater amount of noise reduction. **Color** reduces the color noise in the image (red/green/blue specks across the image), and operates the same as **Luminance**.

The **Lens Corrections** tab pictured at right is a software method used for correcting lens defects. Adobe Lightroom has a large category of lens profiles in its database that it can automatically detect in order to correct defects such as distortion (apparent “bulging” of the image) or vignetting in the image (darkened corners compared to the interior of the frame). Automatic lens detection can’t be used with manual focus lenses or telescopes as they don’t have electronic contacts for a camera to store their information as metadata. However, user-made lens corrections are available for some popular manual focus lenses online and can be installed and manually selected. The amount of correction can also be adjusted if necessary using the sliders under **Amount**, particularly **Vignetting** as some degree of vignetting may be pleasing in an image. The **Manual** tab under **Lens Corrections** allows for manual adjustments to distortion/vignetting correction. The **Color** tab under **Lens**



**Corrections** allows for correction of green/purple fringing around objects/details (another lens defect), which is most prominent in lower-end lenses. It also generally becomes more apparent at the edges of the frame as well as when objects are out of focus.

*If you have looked at my other sheet entitled **Astrophotography Editing in Photoshop CS6**, you’ll notice that this document gives a general overview rather than a strict formula for editing astrophotography. This is simply because editing in Lightroom can vary quite a bit from photo to photo, and as such there is no formula that will work with every single astro photo, even if they’re of the same type (deep sky objects, landscape astro, etc.).*

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**Before & After Example:**

Top image after intermediate processing in Photoshop CS6, bottom image after final processing in Lightroom 6. Adjustment Brush was used heavily to reduce light pollution, increase background contrast, and emphasize the tail of Comet 2015 Q2 Lovejoy.

