

HD Stills and Video Enhancement Techniques for the NDSF HD Camera Using Photoshop and Final Cut

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Enhancing HD Stills with Photoshop

The following describes how to enhance images using Photoshop, but this can be used as a guide for many other types of software that are used to enhance and/or correct still images. There are a few things to keep in mind before processing. Make sure your monitor is calibrated with a scope or your computer monitor is at an appropriate setting for fixing images. Somewhere “middle of the road” is best, 50% brightness. The NDSF still images are stored as raw unsharpened images therefore need sharpening. The document is written in the order of how you generally process the images, but the following information is dependent on many circumstances including exposure at time of capture. You may, or may not, find that all these suggestions will work for every situation.

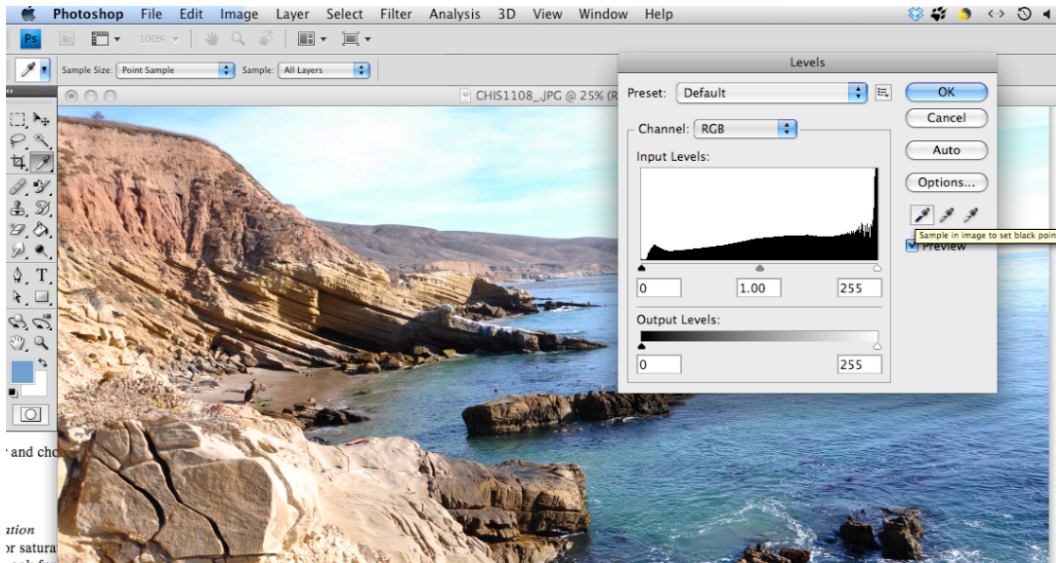
Color Correction:

Adjusting Black, White, Mid points:

Setting white, black, and mid points is a useful way of adjusting colors in the image, although this may not work in all cases. For example, if there are no “true” white or black points in an image you may have to make manual adjustments instead of using the eye dropper tool.

Go to Image > Adjustments > Levels (PC: Ctrl-L)

A histogram will appear on screen with 3 eyedroppers under the chart.



- **Black Balance First:**
Select black point eyedropper and choose a black point.
- **White Balance next:**
Select white point eyedropper and choose a white point in the image.
- **Mid point last:**
Select mid-point eyedropper and choose a mid point in the image.

Adjusting Color Saturation:

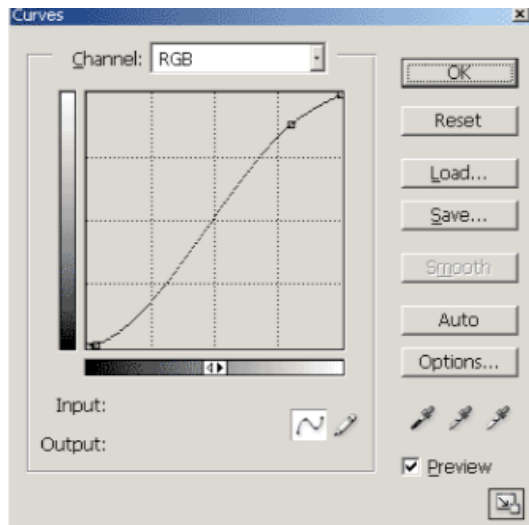
Choose Image > Adjustments > Hue/Saturation

There are options for an overall saturation or saturation of specific colors. Be careful not to over saturate the image. Look for pixel bursts and it may be helpful to zoom in to see that you have not introduced too much noise.

Contrast and Brightening the Image:

There are a few ways to adjust the brightness and contrast of an image. You can use levels, curves, or the brighten/contrast slider.

- **Using Levels:**
If the image needs an overall contrast *choose Image > Adjustments > Levels*. Drag the Shadow and Highlight input sliders inward until they touch the ends of the histogram.
- **Using Curves:**
If the image doesn't need an overall contrast adjustment, but only needs midtone contrast, *choose Image > Adjustments > Curves*. Drag the curve into an S shape.



- Using the Brighten Contrast Slider:

Image → Adjustments → Brightness and Contrast

Sharpening Images

Select Filter > Sharpen > Unsharp Mask. Smart Sharpen is another tool that is available for use. Set the Amount, Radius and Threshold values, using the Preview option to view the results in the document.

Keep in mind that images can easily be over-sharpened. When you sharpen too much, a "ghosting" begins to appear around the edges. Try zooming in to ensure that you have acceptable sharpening values applied.

These are some suggested values for sharpening with unsharp mask. Please keep in mind that there is no hard and steadfast rule and these will vary depending on differences in exposures at time of capture:

- Radius value between 1 and 2
- A slider amount between 150% and 200%
- Threshold values between 2 and 20 can be used to avoid introducing noise

Video Processing and Enhancing Video in Final Cut Pro

The following describes how to enhance video using Final Cut Pro. Some of these features may not be available if you are using Final Cut Pro Express. Something to keep in mind before starting, make sure your monitor is calibrated with a scope or your

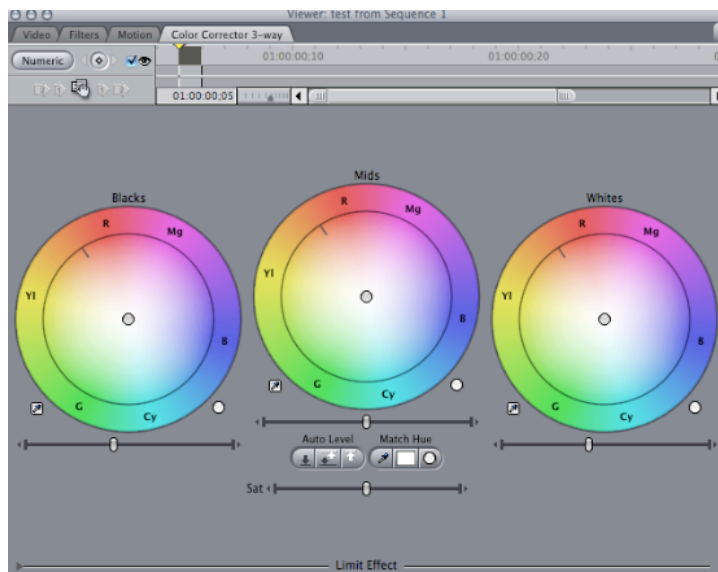
computer monitor is at an appropriate setting for fixing images. Somewhere “middle of the road” is best, 50% brightness. The NDSF video is stored as raw unsharpened data therefore need sharpening. The document is written in the order of how you generally process the video, but the following information is dependent on many circumstances including exposure at time of capture. You may, or may not, find that all these suggestions will work for every situation.

Color Correcting:

Adjusting Black, White, Mid points:

Using the 3-way color corrector in Final Cut is a useful way of setting a white, black, and mid point although this may not work in all cases. For example, if there are no “true” white or black points in an image you may have to make manual adjustments with the color wheels instead of using the eye dropper tool.

A good medium distance shot is always a good way to start when color correcting since the lighting changes so much from far to close. Select the clip you are interested in correcting and *select Effects > Video Filters > Color Correction > Color Corrector 3-way*. A Color Corrector 3-way Color Wheel will appear in the viewer canvas.



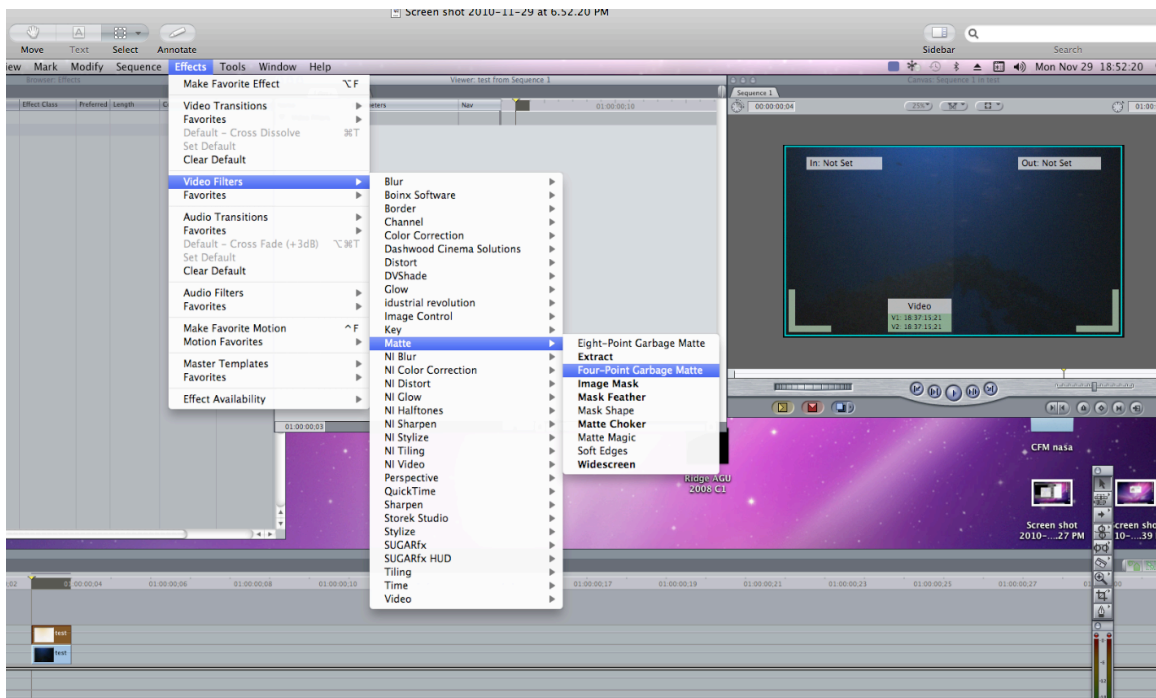
- Black Balance First:
Select black point eyedropper and choose a black point.
- White Balance next:
Select white point eyedropper and choose a white point in the image.
- Mid point last:
Select mid-point eyedropper and choose a mid point in the image.

- Saturation may be adjusted with the 3-way color corrector tool, but be careful not to over saturate the image. Look for pixel bursts and it may be helpful to zoom in to see that you have not introduced too much noise.

Adjusting Taps:

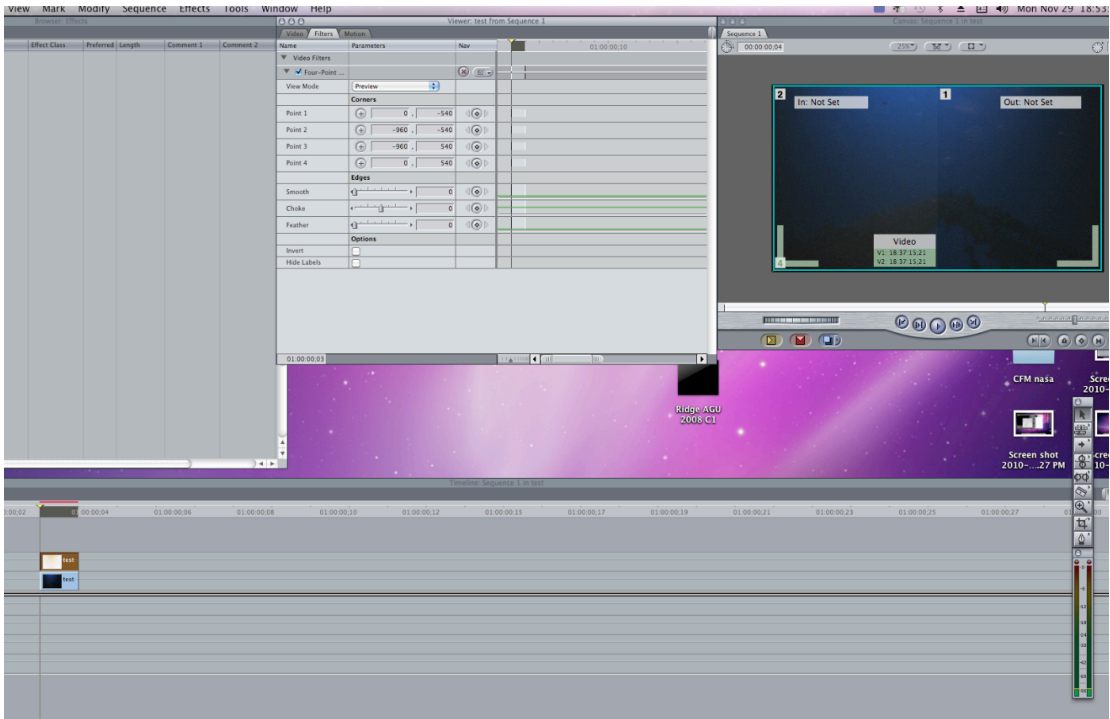
There are times when the camera is in a low light environment and if the gain is set high, the imagery may have a split running down the middle. This is caused by a black level affect in the different parts (or taps) of the sensor. If this is the case, there is a way of fixing this in post with Final Cut.

- Lay duplicate tracks one of top of the other
- Select and highlight the top track and *select effects>video filters>Matte>Four-Point Garbage Matte*

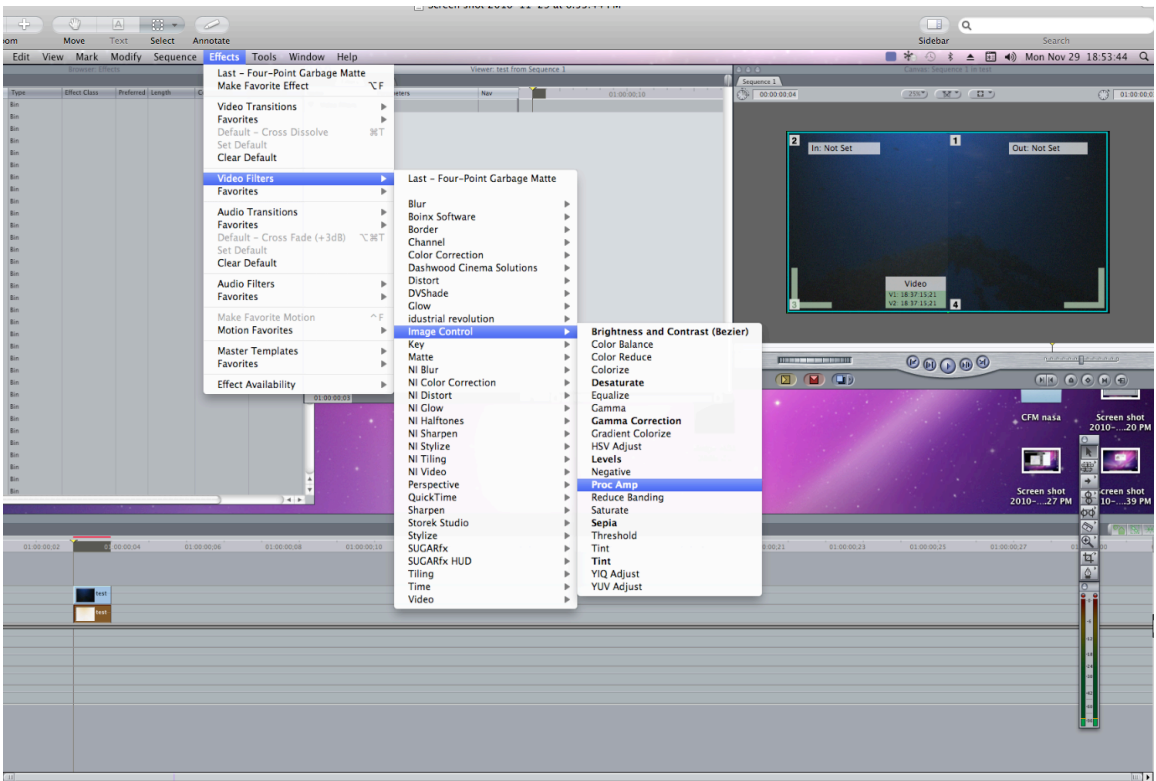


- Use one of the following values to isolate half the screen with 4 point garbage matte (First set alters right side of screen and second set alters left side of screen)

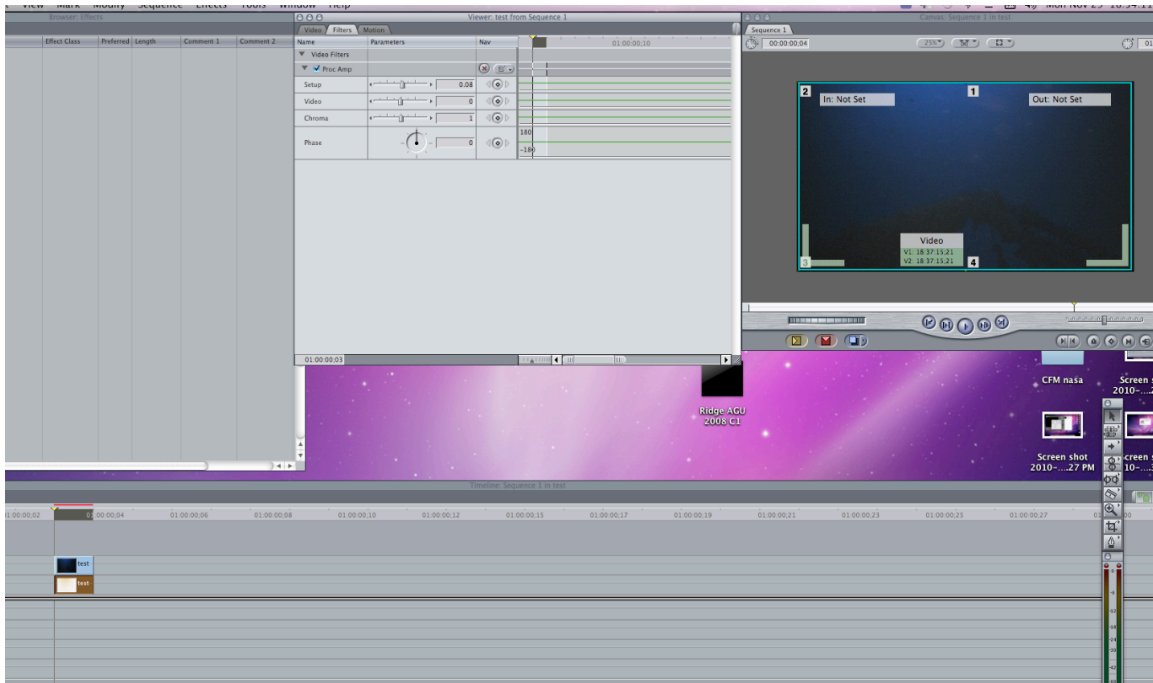
point 1: 0 and -540	OR	point 1: 0 and -540
point 2: -960 and -540	OR	point 2: 960 and -540
point 3: -960 and 540	OR	point 3: 960 and 540
point 4: 0 and 540	OR	point 4: 0 and 540



- Select and highlight the bottom track and *select effects>image control>Proc Amp*

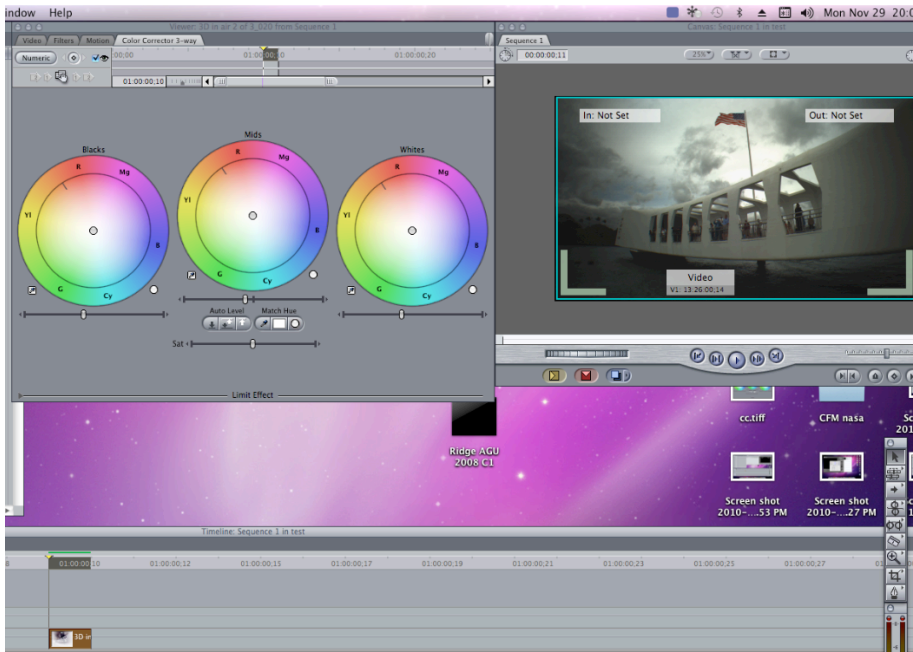


- The Proc Amp values may vary, but below is an example of a value that worked in this particular situation ie (proc amp setup values were at -0.08)



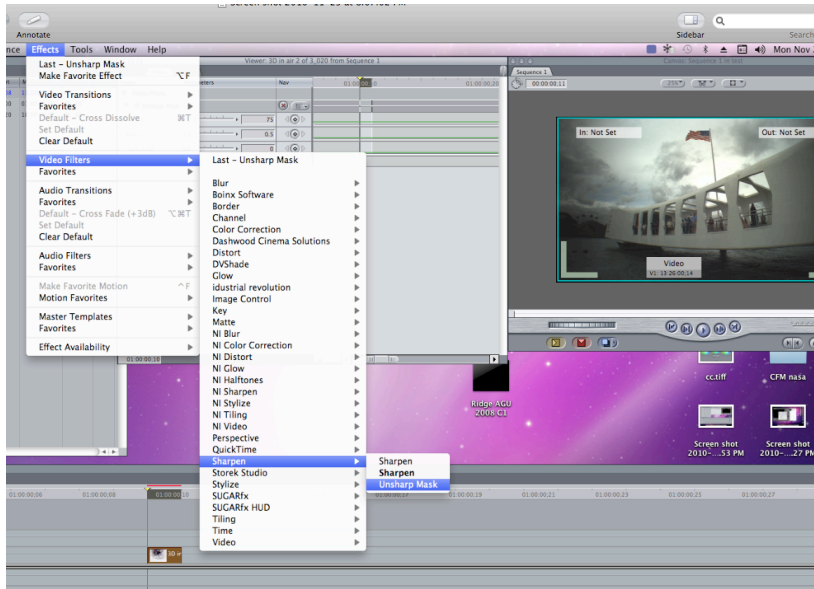
Contrast and Brightening the Image:

The best way to adjust contrast and brightness in Final Cut is to use the 3-way color corrector. There is a tool in Final Cut Pro for contrast and brightening, but it affects the overall image and reduces the image quality.



Sharpening Video

Select Effects > Video Filter > Sharpen > Unsharp Mask. Set the Amount, Radius and Threshold values, using the Preview option to view the results in the document. Keep in mind that images can easily be over-sharpened. When you take it too far, a "ghosting" begins to appear around the edges. Try zooming in to ensure that you have acceptable sharpening values applied.



These are some suggested values for sharpening with unsharp mask. Please keep in mind that these will vary depending on differences in exposures at time of capture:

- Amount=75
- Radius=0.5
- Threshold=0

