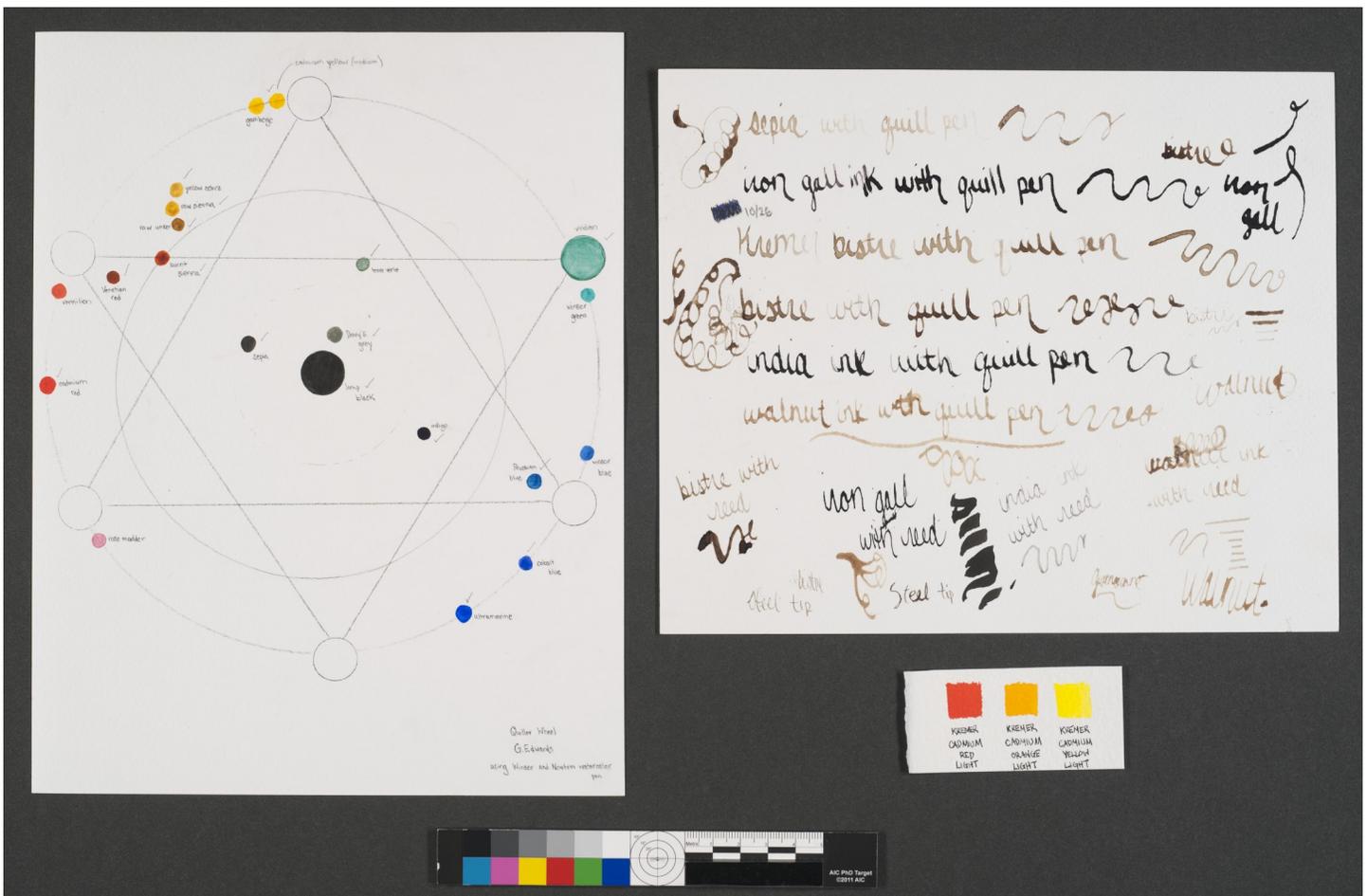


Section 14—Visible Illumination (Modified Camera)

Digital Imaging Workflow for Treatment Documentation

Conservation Division, Preservation Directorate, Library of Congress

VISIBLE ILLUMINATION (MODIFIED CAMERA)



Visible illumination photograph

Section 14—Visible Illumination (Modified Camera)

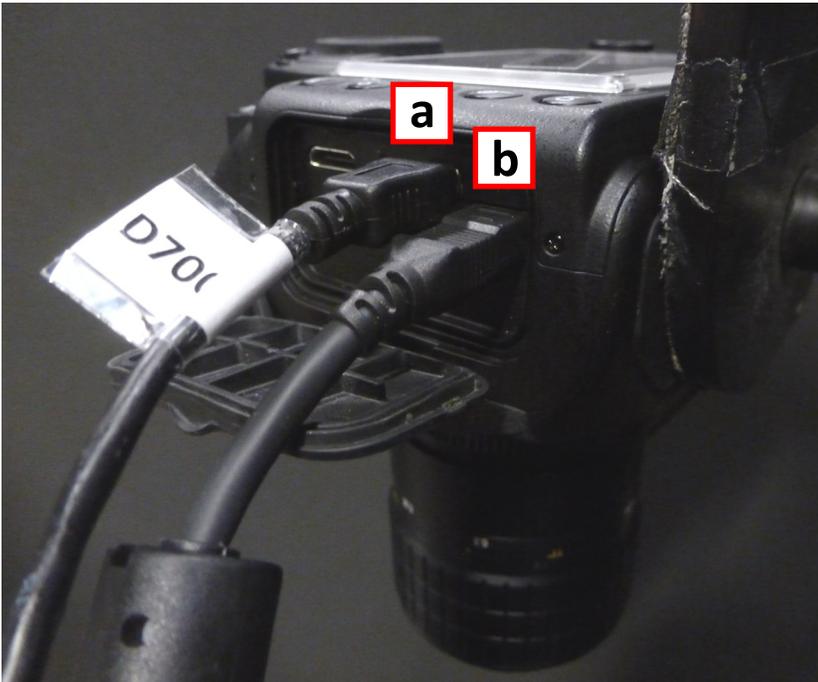


Figure 14.01



Figure 14.02



Figure 14.03

Section 14—Visible Illumination (Modified Camera)

Capture

Set Up

1. Use the Nikon D700 modified camera and the CoastalOpt lens.
2. The USB cable for the D700 is stored in the same box as the camera in the studio cabinet. Attach one end of the D700 USB cable to the camera (14.01a) and the other end to the USB extension cable normally used for the D810. Attach the power cord normally attached to the D810 battery adapter directly to the D700 camera (14.01b).
3. The CoastalOpt lens MUST be set at the minimum aperture setting of f/45 (14.02) to utilize the electronic aperture function (otherwise the camera will display fEE).
4. The **PECA 916 and PECA 918** filters are used for visible illumination with the modified camera (fig. 14.03). The filters are stored in the studio cabinet. Very carefully, screw on both filters to the end of the camera lens. The order the filters are screwed on does not matter.
5. Turn on the North Lights and confirm each light stand is at the 66" mark on the floor and the top of the collar is at the 52" mark on the light stand. Allow the lamps to warm up for 15 minutes before taking any images. If the lights were just turned off, wait 10 minutes before turning on again.

Section 14—Visible Illumination (Modified Camera)

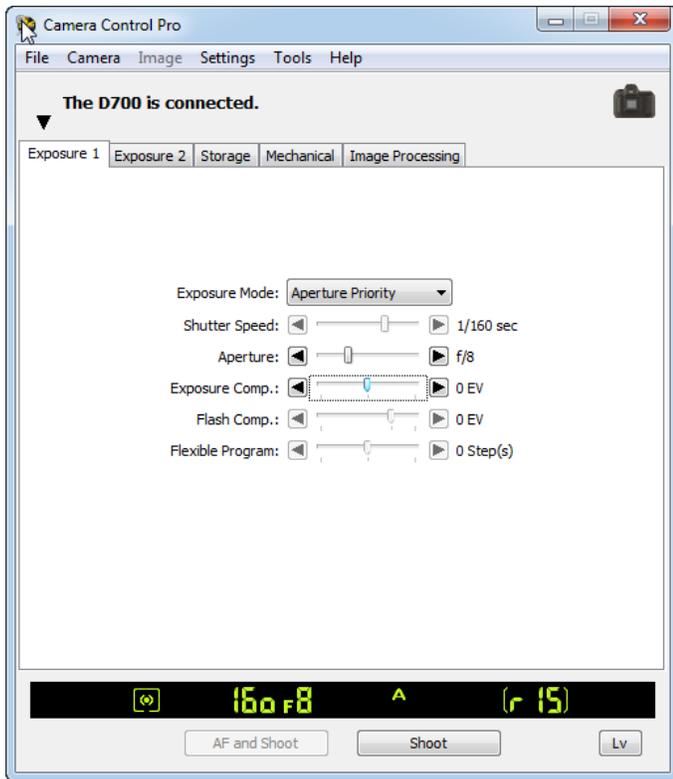


Figure 14.04

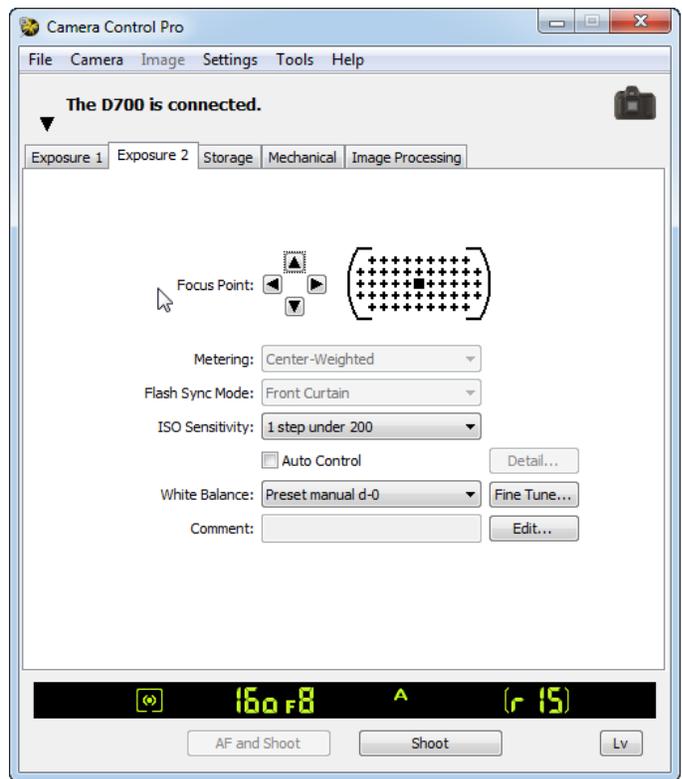


Figure 14.05

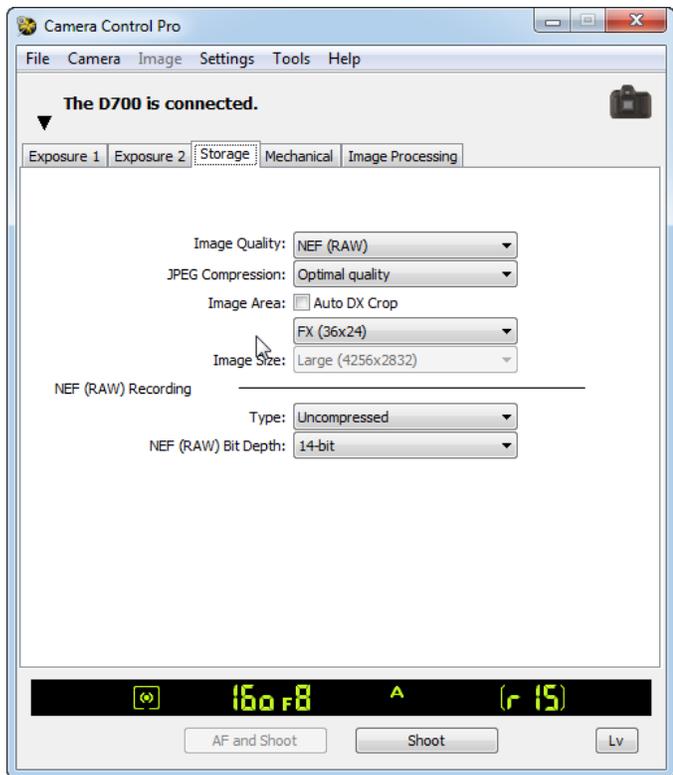


Figure 14.06

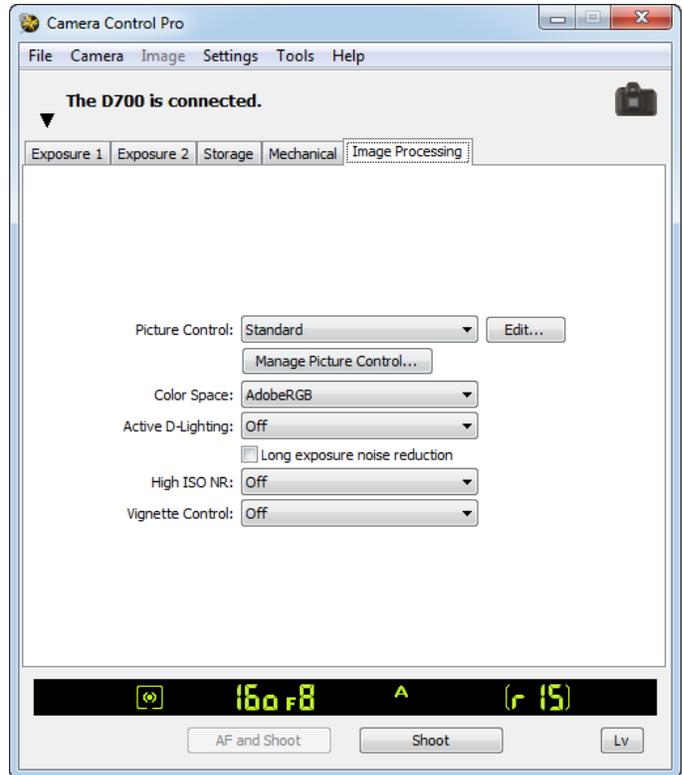


Figure 14.07

Section 14—Visible Illumination (Modified Camera)

Adjust and Verify Camera Settings

Open **Camera Control Pro** and select the following:

Exposure 1 tab (fig. 14.04):

Exposure Mode: Aperture Priority

Aperture: f/8 (flat objects) or f/11 (3D objects)

Exposure Comp.: 0

Exposure 2 tab (fig. 14.05):

ISO Sensitivity: 1 step under 200

White Balance: Preset manual d-0

Storage tab (fig. 14.06):

Image Quality: NEF (RAW)

Type: Uncompressed

NEF (RAW) Bit Depth: 14-bit

Image Processing tab (fig. 14.07):

Picture Control: Standard

Color Space: Adobe RGB

Active D-Lighting: Off

High ISO NR: Off

Vignette Control: Off

Section 14—Visible Illumination (Modified Camera)



Figure 14.08

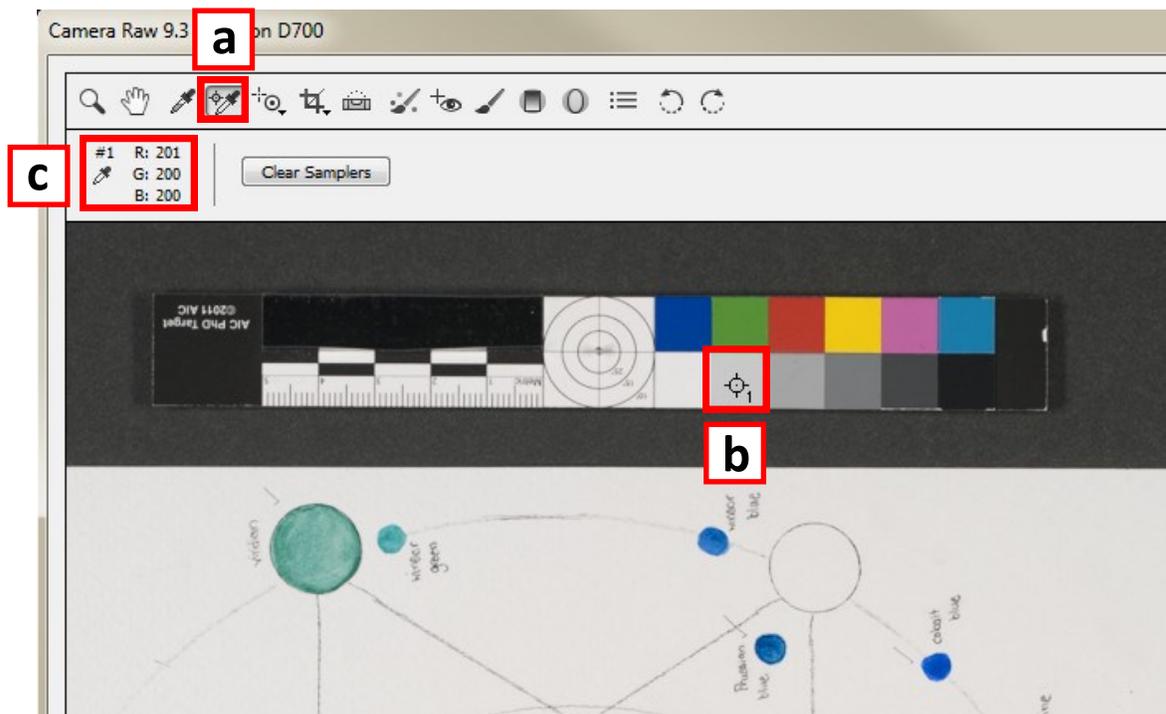


Figure 14.09

Section 14—Visible Illumination (Modified Camera)

White Balance

1. In **Camera Control Pro**, select *Live View*.
2. Fill the image frame with the X-Rite Color Checker White Balance Card. Close *Live View*.
3. Click *Camera > Measure White Balance*.
4. Select *Preset manual d-0*. Click *OK*.

Image Capture

1. In **Camera Control Pro**, select *Live View*.
2. Position your object in the image frame. Place the color target adjacent to the object so that the gray patches are positioned closest to the object and the lightest gray patch is equidistant from each light source.
3. The focus will need to be adjusted manually, so move the computer stand close to the camera. In *Live View*, set the *Magnification Ratio* to 100% (fig 14.08a). The autofocus function is not operational with the CoastalOpt lens, so use the focusing ring on the lens to focus manually. The focus frame will remain red due to manual focusing. When taking a series of multimodality images, **DO NOT change the focus** from what was just set to ensure all images are aligned the same.
4. Set *Magnification Ratio* back to full screen.
5. In *Live View* of **Camera Control Pro**, click *Shoot*.

Preview Images

1. In **Bridge**, open the image in **Camera Raw**.
2. Select the *Color Sampler Tool* (fig. 14.09a) and click on the lightest gray patch on the color target (fig. 14.09b). The RGB values should be 200 +/-5 (fig. 14.09c).
3. If RGB values are outside 200 +/-5, adjust *Exposure Comp.* in the *Exposure 1* tab of **Camera Control Pro** and reshoot. Reevaluate in **Camera Raw**.
4. Click *Done* in **Camera Raw** to accept changes.

Section 14—Visible Illumination (Modified Camera)

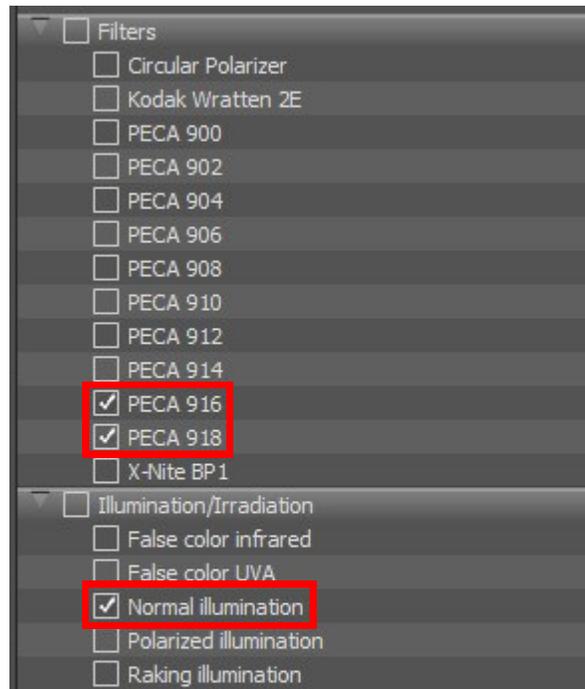


Figure 14.10

Section 14—Visible Illumination (Modified Camera)

Finish

If continuing to another section, remove the PECA 916 and PECA 918 filters before proceeding.

When finished with the session, return the camera, USB cord, filter and target to the studio cabinet and turn off the North Lights.

Metadata

Add metadata as you would for normal illumination except when applying *Keywords* (Section 3). Choose *PECA 916* and *PECA 918* under Filters and *Normal illumination* under Illumination/Irradiation (fig. 14.10).

Image Processing

Adjust Image Files

1. Open the image in **Camera Raw** from **Bridge**.
2. White balance, exposure, sharpening, straightening, cropping, and confirming workflow procedures are the same as with normal illumination images captured with the standard camera (Section 4).
3. Click *Done* to save your adjustments.

Rename and Save

Follow the instructions in Section 4 for renaming and to create .dng archive files and .tiff derivative files.