

Very Low Light Solutions

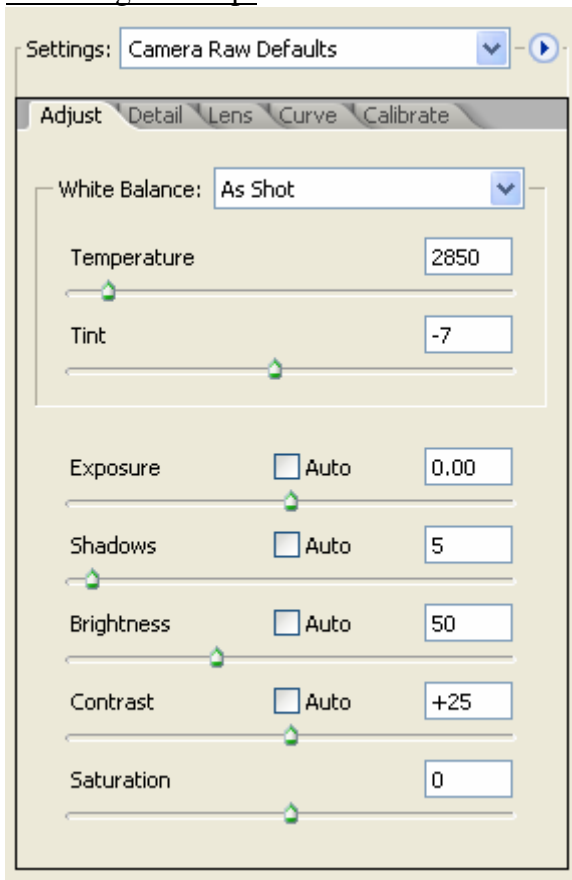
Problem: You want to take a number of pictures at a theatre or show where the only lighting that exists is from the stage lights. The staging is fairly dark. You are allowed to have your camera – but no flash permitted! There is action on the stage and you want to be able to catch the action with an acceptable shutter speed. You can have a monopod, but no tripod. How to proceed?

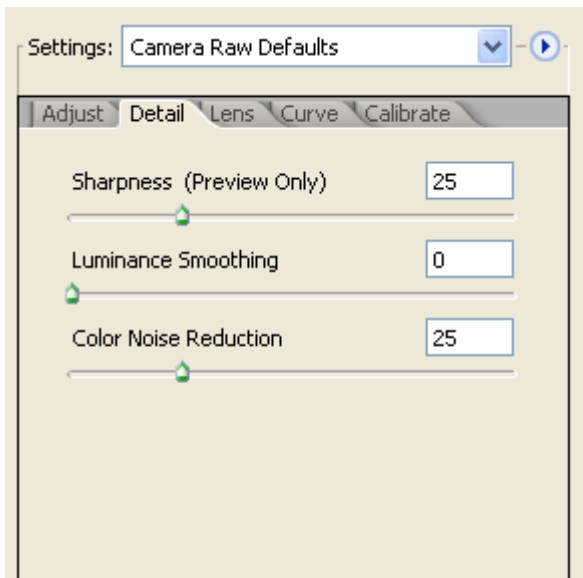
Solution: Set your camera to a high ISO setting, crank down the EV settings – maybe two stops. Select the Raw image setting on your camera. Put your camera on the monopod and start shooting. When you get home increase your EV settings and tweak the other settings in your Raw camera plug-in in Photoshop. Then remove noise. Enjoy!

Approach:

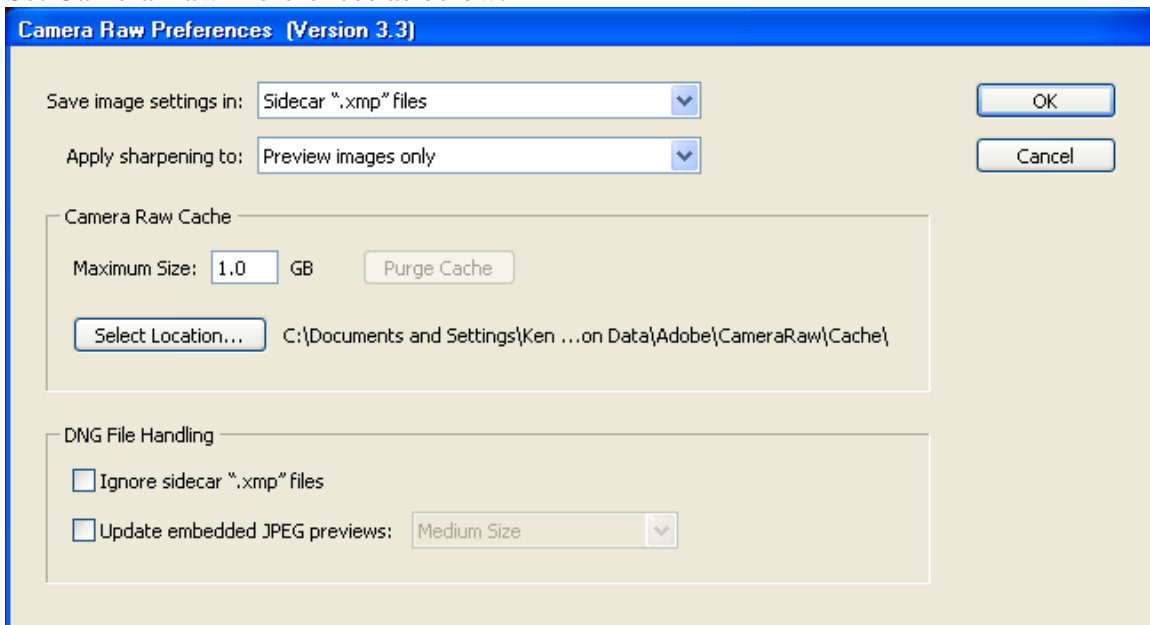
Camera Setup: Choose a high ISO setting such as 1600. Choose Raw format. Set EV = -2. Select Single-servo or Continuous-servo auto focus. Programmed Auto is fine (Camera will select the largest aperture so a depth of field situation exists). Choose tungsten white balance or appropriate WB setting. Since you are going for a batch of images and will probably not want to fool with them too much select a degree of on-camera sharpening.

Raw Plug-in Setup: Set Camera Raw Defaults as below:





Set Camera Raw Preferences as below:



Processing Steps:

- Bring images from camera into computer. Put in a folder entitled *.Raw
- Open folder in Nikon View. Use Nikon View to rotate images that need to be rotated
- Open folder in Bridge
- Batch rename the files keeping them in the same folder (Tools > Batch Rename)
- Select all files. Right click an image and choose Open in Camera Raw. All will open in the Camera Raw plug-in under Bridge control
- Tweak a representative image starting with the Camera Raw Defaults. Here is where you add back in the reduced EV's (Exposure up 1.5 to 2.0). Tweak some more Raw Plug-in settings as appropriate
- Then Select All. Then Synchronize. Now all will be at an approximate correct setting

- Next create a new folder to hold the jpg versions of all the processed Raw images
- Create jpg versions of each image in the Raw folder directing them to the new jpg folder (Tools > Photoshop > Image Processor). Could rename here; however, all will have jpg as extension to differentiate from the Raw images
- Next create a new folder to hold the noise filtered versions of the jpg images
- Open Neat Image in the All Programs location of the Start Menu. Batch process all the jpg images removing noise and sharpening some¹

Observations: Note the differences in histograms between the Raw and the jpg versions of an image (5-30). Review the results of the process. The images were taken with shutter speeds in the range from 1/20 to 1/180 of a second. Since the aperture was open to the max the depth of field suffered. A key point: since the histograms of each of the original images showed most pixels in the lower two quartiles (the noisy quartiles) noise has been introduced to enable the handheld and action stopping characteristics of the above procedure. No such thing as a free lunch!

¹ Observe demonstration of the noise reduction on one image using Neat Image via the NI plug-in