

Night Photography in the Digital Age

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The rapid evolution of digital imaging as the primary tool to create photographic images has brought with it some radical changes in how we capture our photographs. This change involves the whole range of photography from portraits to landscapes, nature, news, and for creating photographs at night, often referred to as available light photography.

With film we had to make decisions as to the speed of film that we were using along with the color balance of the emulsions being used. In the past the color films were classified as Daylight, Type A, Type B and Type F. The Type A films were balanced for use with the standard photoflood bulbs, whereas the Type B films were designed to be used with longer life photoflood lamps that had a color temperature of 3200° Kelvin. The Type F films were designed to be used with clear flashbulbs. We could, with filters, change the color balance of the film but at the price of losing film speed. Other decisions that had to be made included the maximum aperture of the primary lenses to use and, for most photographers, we wanted lenses that were at least f/2.0 wide open or, in some cases, f/1.4 for the 50mm lenses with a few being produced with f/1.2 apertures. Many lens manufacturers produced wide angle and moderate telephoto lenses with apertures of f/1.4 and f/2.0 that have been used by many night photographers.

Now in the digital age we can increase our ISO speeds on the fly ranging anywhere (depending on the camera) from ISO 50 to ISO 1600 and, with some cameras, even higher to ISO 3200 or more. In this way we are able to compensate for the slower zoom lenses that we use, effectively giving us a greater range of being able to photograph under less than ideal conditions. Camera makers have also provided us with other means by which to hand-hold our cameras at much slower shutter speeds with their image stabilization systems built into lenses, or camera bodies, that effectively reduce or completely eliminate the possibility of camera shake.

Using film, our penalty for using the higher speed emulsions was the increased grain in the image. For the digital photographer the higher ISO ratings will result in what is referred to as noise in the darker areas of the image. Depending on the way the sensor and image processor is designed will, to a large degree, affect the amount of noise in the image and this can vary from one brand to another, and even between different models of cameras made by the same manufacturer. A general rule of thumb has been that the larger the sensor the lower the noise but, with current camera development, this is not necessarily true. If your camera has digital noise reduction then use that control.

Let us first look at some of the basic tips that we can employ in our night photography. The first is, obviously, finding a location where we can get good images. The best way is to scout the area at night prior to setting off to do your photography and see where the best angles can be found. If it is a business district are the office building lights on at the time you have chosen to create your images? This will add interest to your images.

If you want to include the moon in your photographs you should know when there will be a full moon and, without question, just where in the sky it is located when you are out creating your

images. Of course, as a digital photographer, you can have a reserve set of images of the full moon and then, after the fact, insert the moon into your photograph using your imaging software. However, don't make the big mistake of placing the moon in a section of the sky where someone would notice that it could never appear in that position, and then embarrass you by stating that fact. Do you want the afterglow of a sunset and will it be where you want the light to be in the photograph. Many times it is good to have some light in the sky to set off the darker buildings to give them dimension and scale

Most important is keeping the camera steady. A good tripod will help but in many public areas tripods are not allowed so you must resort to alternative means of support. I have found that a table-top tripod works very well as does a good beanbag. Other means of support can include the wall of a building, a fire hydrant or other stationary object, the roof of your car, the side of a street light or the back of a bench. Here is a good reason why you should have a good cable release or remote release for your camera to lower the possibility of camera movement when pressing the shutter release. An alternative would be to use your self-timer and, if the camera has the capability, to use the mirror lock feature so that the slap of the mirror does not set in motion camera vibrations.

It goes without question that you should check the weather forecast and dress accordingly and, if in warmer weather, have some insect repellent to ward off those nasty insects that relish the warmth of our blood. Know where you can find shelter in the event that a sudden storm suddenly appears. You don't want to get wet and you certainly do not want to take a chance on damaging your equipment. Most digital cameras do not have adequate sealing against moisture and you do not want to face an expensive repair bill.

A couple of non-photographic tools that you should have with you at all times when doing night photography are a flashlight and a cell phone. The flashlight will be of great help when you use manual settings on your camera and the cell phone is needed to assure you of some means of communication and protection. If you are out photographing with a friend then be sure that they, too, have a flashlight and cell phone in case you get separated from each other. I know of some photographers that will bring along a bubble level to ensure that their camera is correctly aligned. I feel that if you are at least close to being level that you can make any final adjustments using your imaging software to take care of slanting horizon lines.

If your camera is a fully automatic camera without any manual settings then you can only rely on how well that camera has been programmed for use in doing night photography. You are at the mercy of the software algorithms that are built into the camera's program. You would be better served to obtain a camera that does have at least some manual controls. For those who have a camera with controls it is usually a good idea to preset some of the basic exposure and focusing on the camera so that you have someplace where you can begin.

A number of digital cameras (along with some film cameras) have an automatic exposure bracketing feature that will allow you to shoot 3-5 images using different exposures. One at which the camera has rendered its best appraisal of the light in the scene and the other settings up to 2 stops on either side of that basic exposure. Our advantage with digital is obvious... we are

not wasting 4 frames to get one good image since the only cost involved is space on the memory card.

A common rule is to not use flash when doing night photography. There are times when the use of flash can be done to great advantage but the key is to understand how to control the exposure so that the background does not become a dark mass without any detail while the foreground, illuminated by the flash, is filled with detail. Some of the cameras have a night photography mode that has been designed for this specific purpose and on the control dial is usually symbolized by the figure of a person and a star. What happens is that the camera calculates the proper flash exposure and then calculates the exposure needed at that particular lens opening to record detail in the background. In essence, the flash is the “shutter speed” for the foreground and the camera lengthens the shutter speed for the background.

Being able to turn off the flash can allow you to create interesting images using light streaks where the camera is moved during a long exposure to create light patterns. This can result in some very interesting and, at times, weird images that defy imagination. A good example would be driving down a busy downtown street at night with the camera doing a long exposure through the windshield of say about a minute or so. You can also experiment walking along using the same technique with the camera around your neck. Some photographers have used this type of image as backgrounds for overlaying other images to demonstrate their creativity. Another case is where the small tabletop tripod comes into play by shooting at a virtual street level at traffic moving away or towards the camera using a long exposure. The same is true of fireworks where you want to record the streaks of light emanating from the burst in the sky. You can add multiple bursts by having the camera on a tripod, leaving the shutter locked open, and putting a cover over the lens between bursts. Of course, you can also take individual bursts and, in the comfort of your home, do the multi layering of images on your computer.

Many modern digital cameras have multi-pattern metering systems and I have personally found that these work reasonably well in getting the right exposure. However, the camera may set the exposure to the highest possible shutter speed where you really wanted to use a setting that gave great depth of field. The simple solution is to see what the camera has determined to be the correct exposure and then for you, using either the aperture or shutter control, to accomplish your photograph the way you want it to be recorded. You can also do the same thing using full manual controls after establishing the correct exposure. A small notebook is very handy in this case to record those details so that you can then reprogram the camera to do it your way. It goes without question that you should know just how the various metering settings on your camera work and to use the one that is best suited for the task at hand.

All of the digital cameras have automatic white balance (AWB) built-in and for most of what you will be shooting is fine. However, there are times when you want to change the white balance to get a special effect and your best way to do this is to shoot one image using AWB. Check that image on your LCD display panel and also use the histogram to see if there are any exposure levels that need to be adjusted. If your camera is capable of shooting RAW image files then that is the best way to handle the exposure and the white balance of the scene as those adjustments can be made with your image processing software such as Photoshop, giving you virtually infinite control over the final image.

Using a digital SLR opens up some additional possibilities that are not available with the point-and-shoot digital cameras. Primary is the capability to produce light streaks using the zoom lens on the interchangeable lens camera. Using a long exposure, say for example a 1 minute setting, you would have the zoom set at the telephoto or wide position for the first 30 seconds and then slowly zoom to the other setting during the final 30 seconds. You may also want to paint with light using a flashlight and the camera set to a long time exposure. You then simply move into the scene and then paint the object that you want to be lighted with the flashlight, moving around so as to distribute the light evenly, and to avoid being recorded as a stationary object. Using a handheld flash unit you could accomplish a similar effect.

For those that are inclined to do their own settings, and not rely on the auto exposure features of their cameras, here are some basic night exposures that you can use. The list that follows is based on information that has been published by Kodak, Fuji and Agfa and revised based on my personal tests. Always regard such data as a starting point for your own personal photography and be sure that you check your exposure by reviewing the image on your LCD screen right after capturing the image. You may want to check the histogram just to be sure that the exposure levels are within the range that you want to have in your final image. The base exposures are for ISO speeds of 100 and 400. You can relate to other ISO speeds by the use of intermediate lens openings, etc. The table gives you the type of scene followed by suggested settings for the two ISO speeds.

Typical Scene Photographed	ISO 100	ISO 400
Full moon on a clear night	f/8-11 @ 1/125	f/11 @ 1/500
Half or quarter moon on a clear night	f/5.6 @ 1/125	f/8 @ 1/500
Floodlit buildings/fountains using tripod	f/4 @ 1/sec	f/2 @ 1/15
Theater/concerts average lighting	f/2 @ 1/30	f/2.8 @ 1/60
Theater/concerts bright such as spotlights	f/2.8 @ 1/60	f/4 @ 1/125
Circus & Ice Shows/arc lights – very bright	f/2.8 @ 1/60	f/2.8 @ 1/250
Circus & Ice Shows/floodlights – average light	f/2 @ 1/30	f/2.8 @ 1/60
Night football, soccer, baseball games/racing	f/2 @ 1/60	f/2.8 @ 1/250
Basketball games and bowling with TV lighting	f/2 @ 1/30	f/2.8-4 @ 1/60
Outdoor Fair or carnival at night	f/2 @ 1/15	f/2 @ 1/60
Amusement park patterns (time exposures)	f/16 @ 4/sec	f/16 @ 1/sec
Bright theater district (wet surfaces are great)	f/2.8 @ 1/30	f/4 @ 1/60
Bright street lighting (wet surfaces are great)	f/2 @ 1/30	f/2.8 @ 1/60
Interior of shopping mall or store	f/2.8 @ 1/30	f/4 @ 1/60
Signs/Neon etc. (multi-exposures add interest)	f/4 @ 1/30	f/4 @ 1/125
House of worship interior shots	f/5.6 @ 1/sec	f/2 @ 1/30
Window light portraits using north light	f/5.6-8 @ 1/30	f/5.6-8 @ 1/125
Traffic light patterns	f/16 @ 20/sec	f/22 @ 10/sec