

Digital Photography School

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Low Light Digital Photography

Today's tutorial on **Low Light Digital Photography** was submitted by [Anthony Peyper](#).

I tend to like low light photography because of the element of surprise - you never know exactly what you're going to get - no matter how accurate your guess is, especially with longer exposure times...well for me anyway. Maybe some of you reading this will be better at guessing.

It's pretty much the same as any other discipline of photography - light being captured on a sensor & the same rules apply. The basics of photography are still very important - lets start with that. The larger the aperture (e.g. f1.8) the faster your shutter speed will be. The higher the ISO the more sensitive to light the sensor becomes & visa verse. This brings us right to the essence of low light photography, longer exposure times, so a tripod is (mostly) essential.



To get increased exposure times (longer shutter speeds) you will need to decrease the aperture (e.g. f22). The smaller the aperture the longer the exposure times become & the more depth of field your images will have. Simple! Just the basic of photography.

I think low light photography is possibly one of the easiest to master, or at least get a good grip of - I

know some might disagree, but think of it like this, if you're experimenting, just about any result is successful...and that is a good place to start.

I think everybody has their own method for low light photography, and this is mine - I guess, experiment, think, take my time & shoot again. Taking light reading when there's little or no light is hardly easy & it's usually too dark to see anything, so it's very important that you know your camera well. Also it's a good idea to use the timer or a shutter release cable to minimise camera shake.

I usually start by setting my ISO to 100 (or as low as the camera allows, often it's 200) & my aperture to about f22 or smaller, then depending on the light condition I shoot 3 images - at about 5 sec, 10 sec & 20 sec. This usually gives you a good starting point to work from, often you're looking at shooting closer to 20 seconds or even longer, again depending on the lightning, or lack thereof. But you will be surprised how much light there is that you might not even have noticed. Sometimes in very low light conditions you will need to use the bulb setting on the camera. This allows you to keep the shutter open longer than the camera allows with its pre set settings - usually about 30 seconds.

While in Bulb Mode - If you connect a shutter release cable you can keep the shutter open until releasing the cable. If you are using a remote control, press once to open the shutter & again to close. Just remember that the longer the exposure time is, the more digital noise you're likely to get, specially in the darker areas of your picture.

Something to look out for - sometimes shooting with a tripod attracts attention from the police. Check with your local authorities about rules & regulations for shooting with a tripod. A way to get around this is to not shoot in the city. Sea side shots work really well too, specially just at sunset while there is still a small amount of light. Capturing water moving back & forth over the rocks with an exposure of about 10 seconds, can give very interesting results. Also, experiment with different white balance settings - sometimes this can give you some really interesting results.

If you're willing to sacrifice space for quality, then shoot in RAW. The quality is far beyond that of JPG, but this is a whole

new subject. If you want to know more about this, let me know & this could be my next topic. I hardly ever shoot in anything other than RAW. I don't remember when the last time was that I shot in JPG, but I do remember being disappointed with the quality.

Practice - And lastly, the best advice I can give is to experiment & practice practice practice!!! Get to know your equipment & even read the manual. Don't be afraid to ask questions & don't be afraid to take bad pictures. Without bad pictures, how could you possibly recognise your best ones?

Now get out there, turn off the lights & start shooting :)

For some samples of my low light pictures, please go to www.peyperphoto.com

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33 Responses to “Low Light Digital Photography”

- [My Camera World Says:](#)

While normally the sweet spot for lens sharpness is between f11 and f16, in low light especially when there is water or sky movement the higher f-stop will not be much of a problem.

Do forget to bring your flashlight to see where you are going and sometimes to see the controls on the camera.

This would also be a good opportunity, if outside the city, to try and paint with light on the surrounding landscape, especially if longer shutter speeds are used.

In the city do wear reflective clothing as you will probably so focused on the camera that you may not notice cars or other vehicles that haven't seen you are going to be way too close to you.

Niels Henriksen

- [feli Says:](#)

Thank you for sharing tips on low light photography. I do not like using the flash on my camera (because I am using a semi Pro camera that has some manual functions) and I am interested in Low light photography.

THANK YOU ONCE AGAIN.

- [AC Says:](#)

Great tips. I prefer using a longer exposure - abhor using the flash unless I really have to. Also, since I don't have a remote I use a timer when the camera is on the tripod to eliminate any chance of shaking.

- [david Says:](#)

Great article. I've been trying to do more low light photography because I like the look and feel of the pictures. You mentioned a cable release. My 35mm had a cable release but my digital SLR does not. I usually set the shutter to a 2second delay to make sure I don't get camera shake from pushing the button.

- [Kim S. Says:](#)

I went and shot the lunar eclipse the other evening. Each shot I took was done with the timer as my remotes battery had died =(. the shots came out nice though.

I don't think I would suggest for folks to start using RAW until they've learned basic photography techniques. Each variable you add to the photography discipline makes it just a bit more difficult to come out with nice looking shots. Start with jpeg. Then move on to RAW later. Like Peyper says it's a whole new ball of wax.

- [Anton Piatek Says:](#)

Things look different with long exposures, the sea being a classic example:

- [Anton Piatek Says:](#)

Image didnt embed... See

<http://www.flickr.com/photos/antonpiatek/2155147230/>

- [Ash Says:](#)

I have a count-down timer in my camera bag. I carry this because, when shooting low light, you don't want to ruin the image by flashing a torch on your watch, or the cameras timer.

I meter in the fastest ISO (1600 on my EOS 350D) and widest aperture, and then calculate the time accordingly as I step down to ISO 100 and an appropriate aperture - I rarely go narrower than f-9 in low-light. You can then determine the time by doubling for each f-stop (or ISO stop) that you make. Set the timer. Start it counting down as you open the shutter (in bulb mode), and then close the shutter when it disturbs your peace with it's chirping sound. Invaluable.

(PS - I support only using RAW for this sort of antic as JPEG's seem to really accentuate noise)

- [kristarella Says:](#)

I'd love to know more about RAW! I've read some stuff about it, what it is and that you have more control etc. However, I feel powerless when I shoot in RAW because I have no idea what to do with it. I finally learnt a bunch of tricks for tweaking my JPEG shots, but I don't understand how to process RAW shots at all.

I only have Ufraw with GIMP at the moment and I read the documentation, but it didn't make any sense to me. :(

- [Lou Ann Says:](#)

Thanks for a great article. I would actually like to ask Ash about "calculating the time accordingly". Is this a computation that one can do in one's head? I understand stops and the ISO speeds ... so I can't imagine that it would be a real leap to figure out. Clarification would be greatly appreciated. Thanks!

- [Sean Says:](#)

@ kristarella:

A brief bit about RAW (I know someone will do a better job here later): Your camera does a few things to an image between shooting and saving the file as a JPEG, and it does them in a fraction of a second. Shooting in RAW gives you the option to do some of these on your computer, which can give you a better-looking result. You also get more control over things like exposure, white balance, noise, and a few other corrections you may find helpful, especially with night time shooting.

- [Ash Says:](#)

Lou Ann - Let's say you meter at f-8 and intend shooting with the same aperture. Take a meter reading at ISO 1600 (or the highest your camera will do) to enable you to get a rough shutter speed setting. Note this shutter speed (in your head), and then for each halving of the ISO speed, double the shutter speed. Therefore, an initial shutter speed of 10 seconds @ ISO 1600 would become (20s @ 800; 40s @ 400; 80s @ 200) 160 seconds back down at ISO 100. This technique works pretty well for me, although I have also had some deviations, but this may have been shoddy metering by me in the first place!!

Hope this helps.

- [Luca Gervasi Says:](#)

Hallo and thanks for all your advices.

I usually shot in raw too (anyway, i'm a newbie...), but i don't get any advantage but the white balance, so... please...use the "raw" topic for you next issue...please :D

Thanks again

- [11thStudio Says:](#)

Great way of working it out working back from ISO 1600!
Will have to try it,
Thanks

- [hfng Says:](#)

To even minimize camera shake further you could use mirror lockup.

<http://www.reddotstudio.ch/pixelpost/index.php?showimage=168&category=6>

- [James Says:](#)

I'm at a loss to understand WHY you would recommend the lowest ISO and smallest aperture. It's already low light.. you'll already be having long exposures.. Why add to the exposure with small aps and low ISO? (I can see this for cityscapes with moving vehicle lights, etc... but your example photo had no such movement (other than wave action))

- [Bill Zaspel Says:](#)

I would be extremely interested in more general information about shooting in RAW as well as

detailed information regarding workflow in RAW. I have been shooting JPG for almost two years and I am becoming more and more unhappy. I went out yesterday and captured some images during a snow storm yesterday that I hope to rework in Photoshop but I haven't had time to preview them yet. I shot in RAW for the first time because I thought it would be an excellent opportunity to work those images that I knew would be rough due to the dynamic conditions of the weather. Anyway, let's hear what you have to say about using RAW. I don't mean the tired argument about which one is better, and I don't presume that you were going to subject us to that dialogue. I would be more interested in why you like RAW and how your work flow is different.

- Laura C [Says:](#)

I would love for someone who really knows RAW vs. JPEG to explain the real deal between and about the two. So if the writer of this tutorial or someone else could do a tutorial on it, I would be grateful. Good article on low-light too. Makes me want to get out there and shoot.

- JJ [Says:](#)

Thanks for the tips. One question though: what country is this, where you are not allowed to use a tripod to take pictures?

- Tony [Says:](#)

My low-light situations are typically my daughters ballet performances. In those situations, tripods are not practical as they interfere with the others around me. Slow shutter speeds are out of the question unless I'm really trying to capture a blur across the stage. And flash is dangerous to the dancers. So I'm learning to shoot as low (or is it high?) an aperture as I can manage with a reasonably high shutter speed, resulting in darker pictures than I might normally like. But at least they are as clean as ISO 1600 can get on my Nikon D50. Faster glass would help, but I can't afford the Nikon 70-200mm f/2.8G ED-IF AF-S VR Zoom-Nikkor that would make this so much better. You can guess that I'm very amateur at this.

- Lou Ann [Says:](#)

Thanks, Ash! That makes LOTS of sense! :-)

- kristarella [Says:](#)

Thanks Sean. I'd deduced about as much from reading and research. At this point the problem is that my white balancing and colour adjusting abilities are not as good as the cameras :P (I don't know how to use the software properly!)

- saanva [Says:](#)

This is very helpful. Thank you for sharing

- richie [Says:](#)

Anthony, the links to your web site has an extra set of 'www' in it.

"... sometimes shooting with a tripod attracts attention from the police." I am new to this site and

I have never heard of this before. Where is this a problem?

- Debbie [Says:](#)

I liked the tip regarding Raw has less noise with low light photography....Thanks

- [Peyper Says:](#)

Hi everybody & thank you for the comments. It's good to see that this was helpful for some of you, and thanks you to those who added a few extra tips like bringing a torch, wearing reflective clothing & using a self timer or mirror lock up - all very important. I'll try answer some questions that you have....

David - Does your camera not have a cable release made for it? If not, see if there is a remote control (cordless) available for it. Otherwise the timed shutter works just fine...I still often use that method.

Luca (& all others interested) - I'll do a write up on RAW vs JPG ASAP, and don't worry (Bill) it won't be a wrestling match between the 2 :) I'll stay focussed on the advantages of RAW.

James - using lowest ISO produces the least amount of digital noise. Sorry if I mislead you, I don't mean that you should always use the highest possible shutter speeds, it all depends on the result you want. Like you say, if you want a lot of motion, light trails etc then shoot at the longer shutter speeds. I personally like to stretch my shutter times more, but that's my preference, again depending on what I want to achieve (Depth of Field, motion, etc). In my sample image, I wanted the to capture the the motion of the water, even though it is not that extreme, I wanted to capture a ghostly mood.

JJ - it seems like there are a few places, mainly in cities though, where you need a licence of sorts to use a tripod. I know that in the UK (London) due to terrorism acts there have been laws put into place to prevent people photographing near government buildings or possible terrorist targets. I have only read/heard about this, so I am not fully up to scratch with it. I live in Ireland, and have been stopped (on more than one occasion) from taking pictures while using a tripod. I think the Louvre, Paris is another example of where you can't use a tripod for security reasons.

Tony - this is a different style of low light photography - a whole new set of rules apply here :) A bit like live music photography. You can see some samples on my website too. Basic rules here: 1. Hi Iso (set to auto iso but restrict to max of 800 to prevent too much noise). 2. Fast glass, try getting a lens that can go to an ISO of f2.8. Try not to shoot at speeds lower than 1/60 to reduce blurring, depending on how fast the subject is moving. Just some BASIC rules. Drop me an email if you have more questions. Try the Nikon 50mm F1.8 - great lens that won't break the bank. No zoom range but will give great results.

Kristarella - best advise is to shoot something in RAW & then play with the options you have in the software you are using. This is really a case of practice makes perfect. What software are you using for RAW processing?

If I missed any question I am sorry. Please feel free to email me with questions.

- [My Camera World Says:](#)

RAW vs Jpeg

The Camera Raw format is the direct light data hitting the image sensors with only minimal processing applied (Bayer algorithm). Any changes that are performed to the RAW file through RAW editors add what they call a sidecar file, which records those changes. The RAW file is

never changed not matter what you do. You can always go back to the original version and start over.

Every time you save a jpeg image there is some loss of quality, even if it is to rotate file.

Camera RAW sensor can depending on the type of camera record 12 or 14 bits of data vs jpeg which only has 8 bit. This only valid if you are doing extensive image enhancement to tones or colours that stretch their original range. In this scenario jpegs may cause banding in colours or msiised tones and should not in RAW unless to extreme.

Because RAW files have extra data available then normally you are able to recover some blown highlights, but not normally more than 1 stop and even then sometimes one of the colour channels may be clipped a bit if highly saturated colour

For most camera images the biggest advantage is that eh White Balance (WB) can be set in the RAW editor and is not permanent as with Jpeg image. It is so easy to change the colour tone of your image form warmer to cooler.

The first image show in blog article how I made the snow more blue.

<http://niels-henriksen.blogspot.com/2007/12/my-winter-snow-capped-friends.html>

The down side is very large files my RAW files are 15MB each whereas my jpeg tend to be about 3-4MB and therefore this eats up memory card space quickly or the hard drive storage.

Also you need a RAW editor (some are free) and a workflow that allows to maximize the benefits of 16bit workflow like Adobe CS.

There are even books just devoted to RAW processing.

Here are a few good technical articles from the web.

<http://luminous-landscape.com/tutorials/understanding-series/u-raw-files.shtml>

RAW vs Jpeg

http://www.luminous-landscape.com/reviews/raw_vs_jpg.shtml

Primer RAW format

<http://www.cambridgeincolour.com/tutorials/RAW-file-format.htm>

Thom Hogan Quick & Dirty Guide to RAW

<http://www.bythom.com/qadraw.htm>

Niels Henriksen

- [Lou Ann Says:](#)

Washington, DC is another city where you technically need to get a permit to use a tripod. Police are inconsistent about enforcing this law. I have used a tripod there without a problem, but only at low-tourist times and only when I am sure to stay out of the way. I have heard of lots of people who have had problems with tripods in DC...

- [dhanasekar Says:](#)

good and i want suggest one thing, yes if i want take picture in low light ‘never use zoom lens or tele lens, i used only block wide lens it gives great depth and avoid nois also. And one more important, dont be tens; work with cool.

- [Nuno Says:](#)

“Simple! Just the basic of photography.”

That’s true.

The basic of photography.

Nice blog. :)

- [Jamie Says:](#)

Thanks for the tips. My first outdoor shoot at night once the weather warms up here is going to be at night, so stumbling upon this article is ver timely for me.

- [Olivia Bell Says:](#)

Landscape, waterscape... anything other than portraits I don’t feel comfortable with. This article has really helped me. Thank you :D

- [bryan Says:](#)

it’s a great articles, iam a newbies wait for more new articles from you.

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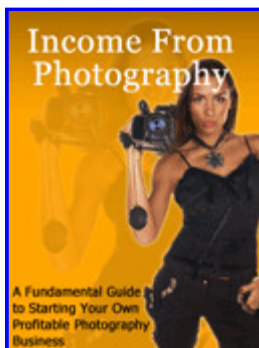
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