# The Mansurovs

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# The Future of Digital Cameras

Ever since I got a taste of some of the latest compact cameras from ***Fuji***, ***Sony*** and ***Nikon***, I have been thinking more and more about where we are headed in terms of cameras and lenses. What is the future of digital cameras and where will we be in 5 or even 10 years? This question came up in my conversation with a fellow photographer, so after discussing this topic for a little while, I decided to put some of my thoughts together and come up with what I think the future of digital cameras will be like.


Mirrorless vs DSLR

Before Panasonic invented the first “mirrorless” interchangeable lens camera back in 2008, we only had three primary categories in the market: point and shoot cameras with fixed lenses, film or digital SLR cameras with interchangeable lenses and other specialized cameras – three primary categories separated mostly by price and features. Then came the mirrorless. The first interchangeable lens cameras did not receive as much attention initially, because most people were rather skeptical of the new product breed. With point and shoot cameras

varying in size and capabilities, even having SLR-like features with “bridge cameras”, it just felt like we did not need another camera category. But as the product continued to advance and mature, more and more photographers started to realize and embrace the benefits of a compact system. Less bulk and heft with near-DSLR image quality. In a relatively short period of time, interest in such a system spiked up. The mirrorless market showed tremendous growth and those who were in it were rapidly gaining market share, according to market research from respected research organizations. Seeing this as a potential loss of opportunity, Sony and then eventually Nikon also entered the market with their own mirrorless offerings and Canon is rumored to release a mirrorless camera system later in 2012. Clearly, the mirrorless market is set for a lot more growth going forward and eventually will surpass the DSLR

market share globally in my opinion (it already has in Japan as of 2011).

**The Evolution of Smartphones as Digital Cameras** Simultaneously, we were introduced with high quality compact cameras in smartphones that also pack photo editing tools and other goodies; but most importantly, they are connected to the Internet. With social media taking over a big chunk of the Internet (with ***Facebook surpassing Google*** in traffic), it is very convenient to have a smartphone that can take pictures that one can instantly share with friends and family. Why buy a compact point and shoot camera that makes average pictures, if our phones can do more or less the same? Convenience clearly wins and the compact point and shoot market is slowly starting to disappear.

Digital camera sensor technology has signif-

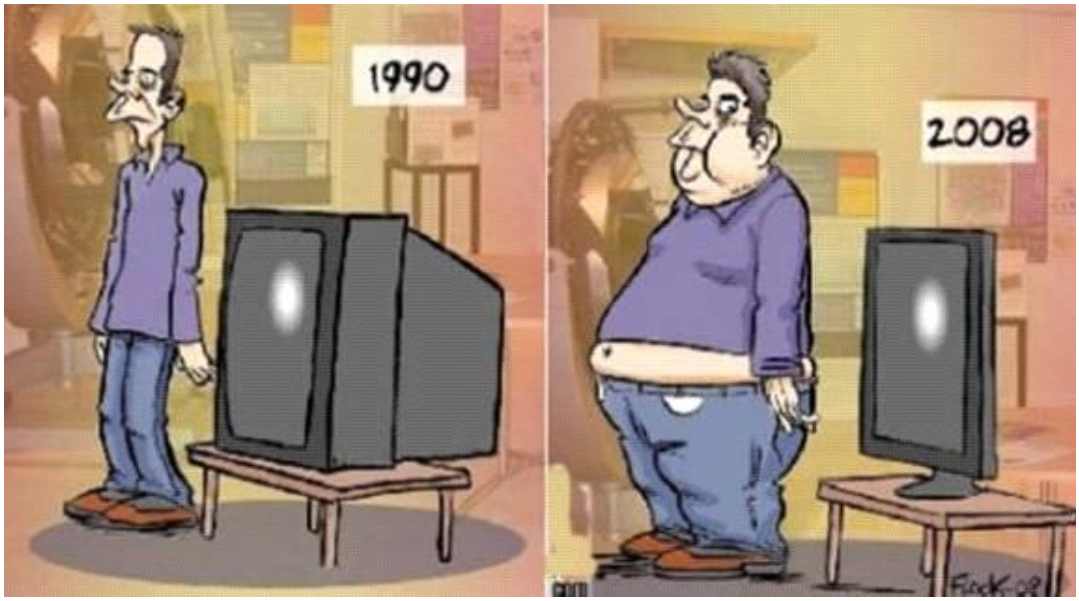
icantly improved and advanced during the last 5-7 years. Image quality from a cheap camera today looks better than from the most expensive and advanced cameras with bigger sensors that are now antiquated. This has to do with a combination of factors – not only are we much better at manufacturing high-quality sensors with tiny pixels, but we are also much better at tweaking the output from those sensors. Resolution has also significantly increased. My first ***Kodak DC-50*** digital camera had a 756×504 resolution sensor and it was a beast. Today, my iPhone takes better pictures than that and it is about 20 times smaller in size! Hence, the size of the pixel relative to the size of the sensor will continue to get smaller and smaller, while image quality will continue to get better.

We see an interesting trend today – smartphones are taking over the point and shoot mar-

ket, while it seems that mirrorless will naturally be taking over the DSLR market as well. With the world being more connected than ever, I strongly believe that it is a matter of time before point and shoot cameras with small sensors completely disappear. Nokia is already using a 41 megapixel camera in their ***Nokia 808 PureView*** cell phone, so we will surely be seeing more smartphones in the future that will compete head-to-head with point and shoot cameras. Computing is quickly transitioning to smaller, thinner and slimmer hardware through tablets, so we already know that the future is with smaller and more capable devices. And if you really want to step into the future, check out Google's ***Project Glass***.

What about the mirrorless though?

**DSLR is Here to Stay** Will DSLRs be soon replaced by mirrorless cameras? I believe that




Smaller and Thinner

we will see a big shift in camera technology within the next 5 years. I am confident that mirrorless will take a significant share away from the DSLR market. It is a natural progression considering Moore's Law. Once mirrorless cameras get better in autofocus, EVF, processing power, battery life, shutter lag and have more in-camera features, most people will be choosing them over DSLRs – for weight and bulk reasons alone. Does it mean that it will be the end of DSLRs? No, I believe DSLRs are here to stay

for a very long time. Let me explain.

Ever since the Nikon D800 came out, a lot of photographers have been dubbing it as a “medium format killer”. While the D800 is truly a revolutionary camera as I have pointed out in my ***Nikon D800 Review***, it will never be a medium format camera. And while it will probably hurt the sales of medium format cameras in the short term, it certainly won’t kill the MF market. Not even close. If you have ever shot a medium format camera before, you already know where I am going with this. From simple physics (physical sensor size, diffraction, depth of field, etc) to resolution, image quality, color depth and dynamic range, a larger sensor will always have an advantage over a smaller sensor. Wouldn’t you agree that if you took the D800 sensor and more than doubled its sensor size, it would make a phenomenal medium format camera? Pretty soon we will see some

very high resolution MF sensors, so again, it is just a matter of time. Mirrorless cameras are built to be compact and they cannot quite compete with DSLRs in terms of sensor size, just like DSLRs cannot compete with MF. We might see a full-frame mirrorless at some point in the future, but that would make it far from being compact. The camera body might be smaller due to lack of a mirror and pentaprism, but lenses will still have to be big to accommodate a large sensor, making such a system tough to balance and handle.

In addition, we should not forget about the advantages of DSLR cameras for specific situations such as sports and wildlife photography, where high ISO performance and autofocus speed/accuracy are critical. I just don't see manufacturers making compact 600mm lenses anytime soon that can focus as fast as current professional lenses. I am not saying that it

won’t ever happen, but it will take us a long time to get there.

Lastly, DSLR cameras do not have to die. Just like medium format coexists with full-frame, I believe mirrorless will coexist with DSLR. Think of it as a compact car and a 4×4 truck – both have their uses.

**Mirrorless as Primary Camera** As I have said above, I believe mirrorless cameras will dominate the digital camera market in the future. Most typical consumers will choose mirrorless for weight, size and better in-camera technology factors, while others will continue to shoot with DSLR and Medium Format cameras, or shoot with both. In a way, it is already happening. Many pros have either settled on a compact everyday mirrorless camera, or are in an active search for one. I am personally still shopping for a good system to fit my needs.

Why do we want mirrorless cameras? Because too much is happening in our everyday lives and carrying a large, heavy and expensive camera in a backpack all day long, which causes back, neck and other injuries is not turning out to be a very pleasant experience. I find myself often leaving my DSLR at home for this very reason.

So why not have a lightweight mirrorless camera that I can take with me everywhere? It would become my primary photography tool, while I would still rely on my DSLR camera for serious, commercial and demanding work.

**The Internet** With the Internet affecting our everyday lives, integration of everything around us will become a necessary evil. In the next five or more years, I expect many digital cameras, whether mirrorless or DSLR to have the ability to share photographs over wireless

networks. Nikon's recently announced ***D3200*** can share photos with another device via a wireless adapter, so I suspect these kinds of connectivity options will soon become standard among manufacturers.

What do you think about the future of digital cameras? Do you agree with me, or do you have another perspective on the subject?

# Is Nikon D600 on the Horizon?

So far this year has been pretty hectic for Nikon. With three excellent DSLR camera bodies (***Nikon D4***, ***Nikon D800*** and ***Nikon D3200***), two superb lenses (***Nikon 85mm f/1.8G*** and ***Nikon 28mm f/1.8G***) and some accessories announced, it is hard to imagine that Nikon might introduce more DSLR cameras in 2012. While Nikon D5100, D7000 and D300s are all due for an update, our friends at ***Nikon Rumors*** are already receiving some early rumors about the possibility of a new budget full-frame (FX) DSLR from Nikon that will be

supposedly announced later this year with the new “Nikon D600″ name.


Nikon D600

The key word here is **budget** – the Nikon D600 will apparently be marketed as a low-end FX camera at a very low price point. Currently, the cheapest DSLR from Nikon is the Nikon D700, which has a price tag of $2,199 USD (MSRP) and

the new D800 sells for $2,999 USD (MSRP). The rumored Nikon D600 will have a very low price point, maybe as low as $1,500. Interestingly, this all goes back to some early rumors about the Nikon D400 (D300s replacement) being a full-frame camera. Could it be that Nikon will discontinue the professional DX line completely and replace it with FX? It is hard to tell at this time, but judging on Nikon's history of replacing the D90 with a more advanced D7000, I would not exclude that possibility. So far I have been projecting that Nikon would continue the development of its pro DX line with a D400 DX, but if a budget FX camera comes out at the same or lower price point as the D300s, then forget about the D400 DX.

If the rumors are true, then here is how the

new product line from Nikon would look like:

1. Entry Level (APS-C/DX): Nikon D3200
2. Upper Entry Level (APS-C/DX): Nikon D5100 (to be replaced by D5200)
3. Mid-range (APS-C/DX): Nikon D7000 (to be replaced by D7100)
4. Budget High-End (FX): Nikon D600
5. High-end (FX): Nikon D800
6. Professional (FX): Nikon D4

To be honest, this kind of roadmap makes sense to me. Manufacturing full-frame sensors is getting cheaper and considering the threats from the mirrorless market, it might very soon get hard for Nikon to compete head to head with mirrorless cameras with large APS-C size

sensors. Image quality is already there, so it is just a matter of time until we see a fast and accurate autofocus system on mirrorless cameras. Hence, offering an expensive camera with a small sensor might not be a feasible option going forward. Personally, I would not want to invest much money in a high-end camera with a small sensor. I would rather buy a more compact solution that I can take with me everywhere I go, for the same money. If Fuji significantly improves its AF capabilities and fixes all the bugs on the ***Fuji X-Pro1***, I don't think you would want to put your $1,699 towards a heavy and bulky D400 DX, for example. Sure, you might have already invested heavily on Nikkor lenses, but at the end of the day (as we know from the smartphone market), smaller size, less weight and convenience win – and that's exactly what the mirrorless cameras deliver in comparison to DSLRs. But that's a

different topic of discussion, so I will leave it there for now.

Let's get back to the rumored Nikon D600. Here are the rumored D600 specifications (from this ***Nikon Rumors article***):

1. 24.7MP full frame sensor
2. Weight: 760g (850g with battery and memory cards), the D800 weights 900g
3. 3.2″ LCD with 921K dot with ambient sensor control
4. HDMI output
5. Video compression: H264/MPEG-4
6. Full HD with 30p, 25p, 24p, HD with 60p, 50p, 30p, 25p
7. Viewfinder coverage: 100%for FX , 97%for DX

8. Built-in AF motor
9. Weather sealed body
10. ISO range: 100-6400 (with Lo-1 ISO 50 and Hi-2 ISO 25,600)
11. 39 AF points (with an option of 11 AF points), 9 cross-type AF points
12. AF face detection
13. Exposure compensation: ±5 EV (same as the D800)
14. EN-EL15 rechargeable Li-ion battery
15. 5 fps (same as the D700, the D800 has 4fps)
16. 2 SD card slots with Eye-fi support
17. Build-in retouching images functionality

18. Built-in flash with sync speed of 1/250s

19. Two user settings: U1 and U2

20. Fn button

21. Auto DX crop mode

22. In-camera RAW editor

23. Built in time-lapse functionality

24. Possibly with build-in HDR

25. New external battery grip

I personally do not care about most specifications here, except for a few things like sensor resolution and ISO performance. With a 24.7MP sensor and ISO 100-6400 range (same ISO range as on the D800), pixel level performance of the D600 should be cleaner than on

the D800, but only if a newly-developed sensor is used. And if that's really the case, then Nikon would be limiting the camera's potential capabilities with the max 6400 ISO cap. Extending beyond ISO 6400 could potentially threaten D800 and D4 sales, so in a way it makes sense. There is also a chance that Nikon might reuse the Nikon D3X sensor on the D600 as well, since it has a very similar resolution (24.5 MP).

At this point, it is hard to say whether rumors will turn out to be true, but time will tell. We will keep you posted with any news regarding the D400/D600 cameras.

What do you guys think? Is Nikon really going to release the D600? And would you buy such a camera?

# Nikon Still Shipping D4 with Sony 16GB XQD Card and Reader

While the first batches of the ***Nikon D4*** cameras included a free ***Sony 16GB XQD card*** and reader, it was reported later on that the new shipments of the D4 did not include the card or the reader. Early speculation was that only the initial shipments to Nikon Professional Services (NPS) members included the XQD card and the reader.


Sony 16GB XQD Card and Reader

Today, I received my D4 and included inside were the card and the reader, so I called the store where I bought it and was told that Nikon is still shipping some with them. They said that their Nikon rep indicated that there is no different part number or special order number differentiating between camera only and camera with XQD card bundle. The representative indicated to them that he does not know when or how the card/reader promotion will end.

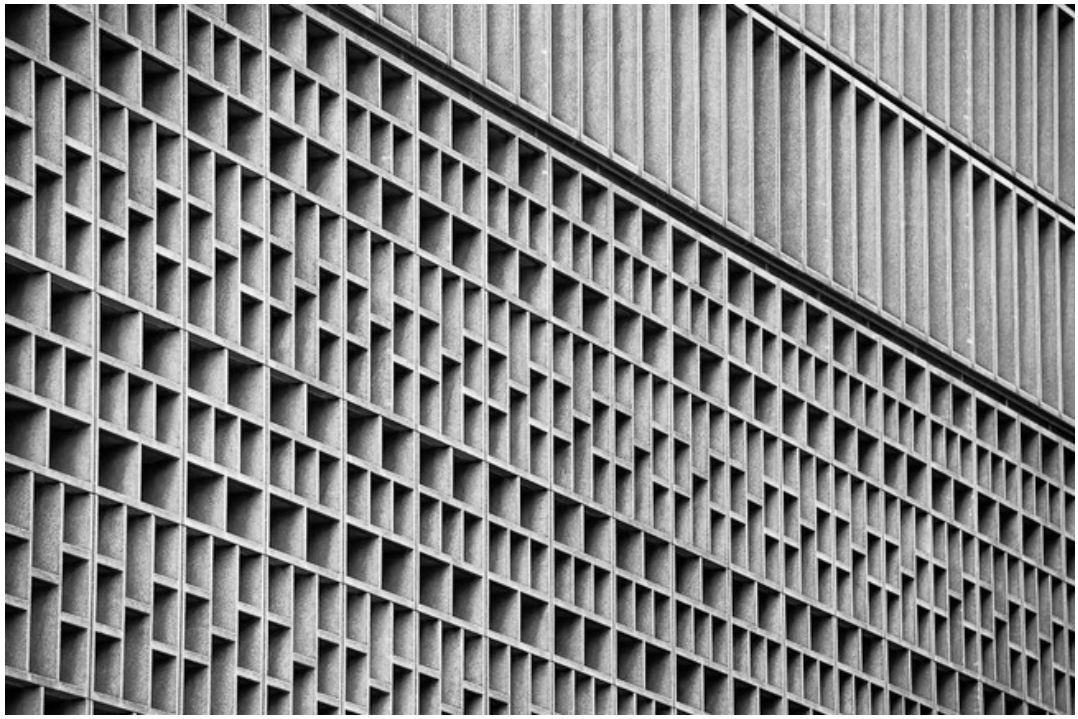
It appears that there may be an inconsistency in how Nikon is handling the Nikon D4

shipments. For now, I can confirm that some of us are still receiving the Sony XQD card and the reader, at least here in the US.

We will have a full review of the Nikon D4 within the next few weeks.

# The Greatest Post-Processing Tool

I often get asked if there is a certain way of achieving a particular look in a photo. How to make colors and people “pop”? How to properly color correct? How to make the skin blemish free? While there are lots of different ways to post-process photos using tools like Lightroom and Photoshop, the most powerful tool in any visual artist’s arsenal is typically forgotten – **your eyes**!



We perceive the world around us by looking and observing things, people, lines, etc. Ever wondered why diagonal lines, curves and specific object placement are pleasing to most people, even to those who are not involved in art? That's because every brain comes pre-equipped with some tools that help us visualize what looks good and what doesn't. These visual tools are already there, but they might not be fully "activated" by you. How would you do that? With lots of training, learning, patience

and interest in your craft, it is just a matter of time. There is no shortcut, no magic bullet.

Once you fully unlock and activate all the visual tools, your brain can take your past experiences or “visual imprints”, along with your imagination, and effectively use these tools to develop a unique style. Your form of expression, your perception of the world.

The more I work on the creative front and the more I take photographs, I come back to this simple concept of finding something pleasing and unique to my eyes only, which rarely fits into the square box of set rules.

I am not a big museum buff, you may not find me looking through old art books seeking inspiration. For each his/her own… I look for beauty, as I perceive it, around me, in my every-day life. I look at women, children, men while on a walk and think of concepts befitting them, seeing something that someone else may not see. At times my mind is just blank…

With whatever I have in my visual arsenal, I sit down and work on my photographs. Some of them rarely need post-processing, as I vi-

sualized and shot them just the way I wanted. Other times, I come back knowing that I may be tweaking certain things, by adding or removing some elements, which again, has to do with my own perception of things.

My dear friends, there is no perfect skin color correction method that will fit everyone out there. There is no best way to bring out colors and make something visually attractive. Trying to do everything by the book may be absolutely appalling to your personal vision. While hard work to master any skill is necessary, I genuinely ask you not to try too hard in developing your style right away. Give yourself some time and save yourself from burning out. Trust your instincts, be a child, learn the basics, give yourself and your visual perception recognition… These are the things I tell myself every day and I hope you will not mind a free thinking post today on Mansurovs.

# How to Photograph a Solar Eclipse

I intentionally waited on posting this article on how to photograph a solar eclipse until it actually took place on 05/20/2012, because I wanted to document my experience and provide information on what challenges I had during the process of photographing this rare, but stunningly beautiful phenomenon. This was my first time trying to photograph a solar eclipse; in fact, it was my first time seeing one take place. Yes, there have been solar eclipses before, but I have been missing them all for some reason. This time, after I heard it on the news a week

ago, I decided to watch it with my family and document the event with some photographs. While we in Denver were not as lucky as some folks in US southwest, Japan and a few other places to see the total solar eclipse, the partial eclipse still looked beautiful. Unfortunately, clouds moved in and blocked most of it for us here, but I still was able to capture a few shots when the clouds cleared up a little. I will be sharing those photos with you in this short tutorial. Hopefully when a solar eclipse takes place next time, you will have some useful information on how to photograph it with your camera.

By the way, lunar eclipses typically happen more often than solar eclipses. Photographing the moon is a very different process when compared to photographing the sun. See my ***how to photograph a lunar eclipse*** article for more details.

**1) The Danger of Viewing and Photographing a Solar Eclipse** Before I talk about the process of photographing a solar eclipse, let me first talk about the dangers of doing it. First of all, you should never look directly at the

sun with your eyes, especially through a DSLR viewfinder that shows the sun much more magnified. Remember ***Galileo*** or those ***crazy Indians that stared at the sun and went blind***? You surely do not want the same faith. Looking at the sun through the viewfinder without blocking any light, especially UV can result in immediate blindness. See this article on ***Wikipedia*** for more details.

So what do you do? If you prefer to see the eclipse with your naked eyes, then get a pair of eclipse glasses. If you cannot find them or it is too late to get them now, then there are two things you can do:

1. Build a small pinhole camera/projector
2. Use the camera's liveview/LCD for viewing the sun

Building a small pinhole camera/projector

is very simple. Just grab two pieces of cards, make a small hole in one card, then hold the card above the other one and align them with the sun. The sun's image will be projected through the hole into the second card. If you want something more advanced, check ***this tutorial*** out.

The second method to view the sun through the camera LCD is what I did. First, make sure to mount a very dense/strong neutral density filter in front of your lens. Then, use your camera's LiveView function to look at the sun. It is ideal to have a camera that allows manual exposure control, so that you could stop down the lens and increase the shutter speed while looking at the sun through live view. Bear in mind that if the ND filter is not strong enough, viewing the sun through the LCD could actually damage your camera. Either way, I would not use LiveView for more than a minute or two,

since it could overheat the image sensor. I only used LiveView when taking pictures and turned the camera off in between. When the sun is too bright during partial eclipse, unless you have something like ***Hoodman loupe***, you might not see much when looking at the LCD though.

If you have a point and shoot camera with a relatively small lens, the same eclipse glasses you war could be used as neutral density filters. Just hold one in front of the lens and it should work great.

**2) Photographing the Sequence** One thing you need to decide on, is whether you want to shoot the entire sequence of the solar eclipse, or just the middle of the process (period of totality) when the moon blocks most of the sun, creating a “ring of fire”. I would personally recommend to document the whole process from the beginning to the end, so that you have pic-

tures of all the phases – from partial eclipse to totality and then back to partial eclipse. The nice thing about having the entire sequence in pictures, is that you can later combine images together, creating a nice sequence.

Bear in mind, you will have to be very patient though, as the process could take a while. If for whatever reason you cannot stay for the entire duration of the eclipse, then I would just stay for the total eclipse to capture the “ring of fire”.

**3) Camera Equipment and Lenses** When it comes to photographing a solar eclipse, the type of equipment you are using plays a huge role. Using a camera with a bare lens is not going to work, because the sun is way too bright (especially during partial eclipse) – it will be totally blown out. Even stopping down to a very small aperture like f/22 and lowering ISO

to the lowest value might result in an exposure faster than what your camera allows. Therefore, you need a very strong neutral density filter that would block most of the light from the sun, allowing you to use slower shutter speeds and larger apertures. If the neutral density filter is not strong enough, you might need a couple – in my case, I had a ***6 stop ND filter*** stacked with a 3 stop ND filter together, but a ***10 stop ND filter*** would be better. Stacking multiple filters is not a problem, because you will be shooting with your longest lens at its longest focal length anyway.

Talking about lenses, the longer the lens, the better. I used the ***Nikon 300mm f/4 AF-S*** with a 1.4x teleconverter, because I had it handy. Longer lenses are ideal, so if you have a 600mm lens with a teleconverter in your arsenal, then get them ready! My 300mm was already mounted to my ***Nikon D700***, so I did

not bother changing the camera body.

Camera does not matter, because you will be capturing the solar eclipse at the lowest ISO. Cropped-sensor/DX cameras would work great, because they provide better magnification on the pixel level.

**4) Camera Settings** Camera settings are quite simple. Here is what I recommend:

1. Set your camera and lens on a tripod.
2. Set your ISO to the lowest value like 100.
3. Set your camera mode to Manual.
4. Start out at the fastest shutter speed your camera has to offer, such as 1/8000 and see if you need to lower it.
5. Start out at f/8 and stop down a little more if the shutter speed is too fast. If the sun

comes out too bright and overexposed, it means that you are using a weak ND filter.

Depending on what ND filter you are using, your shutter speed should be fast enough to not cause any vibration issues. I was shooting between 1/500 to 1/8000, depending on the phase of the eclipse and how bright I wanted to sun to come out.

**5) Focus Accuracy and Sharpness** No matter what lens you are using, getting a very accurate focus on the sun and moon is extremely important. I know that some photographers suggest to shoot at infinity using the lens marks, but since many lenses now allow focusing “beyond infinity”, getting a true infinity focus is not that easy – a slight inaccuracy in focus will make the sun and moon appear blurry. Forget about trying to acquire focus on the sun without an ND filter – it is too bright and could be

too small in the frame for that. What I would do, is point your lens at a really far object and focus on that object (either through viewfinder or LiveView). Instead of dealing with refocusing every time you take a picture, I highly recommend to switch off autofocus once you get an accurate focus. Take a picture and use the LCD screen of the camera to see how sharp the sun is. Zoom in all the way and make sure that the sun appears sharp.

One more thing I would like to point out, is if you are using a lens with a teleconverter, or if you are using a consumer zoom lens, the optics are probably not very sharp when shooting at large apertures. Stopping down the lens aperture to f/8-f/11 should give you the sharpest results. Don’t use apertures larger than f/16 – diffraction will kick in and make the moon appear even softer.

**6) Composition** Unless you are shooting at short focal lengths with a foreground object or some sort of a scene, don't worry about composition – place the sun anywhere in your frame. The location does not matter, since you can easily crop the sun out in post-processing. If you have some thick clouds in your frame, then play with the exposure a little and see if you can use clouds as part of your composition. Here is an image that I captured with the clouds, when clouds opened up a little bit during the start of the eclipse:

**7) Post-processing** As for post-processing, aside from cropping and playing with white balance and saturation levels, the only issue you might have is dealing with some noise that might show up even at the lowest ISO levels. Noise levels will increase if you underexpose and try to brighten up in post-processing, so try to expose the sun correctly (you can also bracket your shots). If noise is an issue, see my "***noise reduction tutorial***" that I posted a while ago – there are plenty of tips in that

article on how to clean up noise in Photoshop and Lightroom.

Please let me know if you have any questions!

# Fuji X-Pro1 Review

**Overview** This is an in-depth review of the ***Fujifilm X-Pro1***, a highly anticipated mirrorless interchangeable-lens camera. Built on the success of the ***Fujifilm X100*** and aimed at pros and photo enthusiasts that need a lightweight camera alternative to a DSLR with amazing image quality, the Fuji X-Pro1 is the first mirrorless interchangeable-lens camera from Fuji. Along with the X-Pro1, Fuji simultaneously introduced three prime lenses – Fujinon 18mm f/2.0 XF R, Fujinon 35mm f/1.4 XF R and Fujinon 60mm f/2.4 XF Macro, all specifically designed to be used for the new Fuji X mount. In this review, I

will not only provide detailed information about the Fuji X-Pro1, but will also try to answer the many questions that we have gotten so far on the camera from our readers, along with comparisons to Nikon and Canon DSLRs.

I had an opportunity to work closely with the Fuji X-Pro1 and the new XF lenses for over a month in various environments and I have been intentionally delaying this review for one major reason – as of today (05/19/2012), there is still no RAW support for the Fuji X-Pro1 camera from Adobe. This means that I cannot work with

RAW images in Lightroom or Photoshop like I have been doing with all recently announced cameras. I installed ***Silkypix*** software that supports Fuji X-Pro1 RAW files, but I ended up removing it from my computer almost immediately. I certainly did not feel like learning to use another image editing tool just because of no support from Adobe. I don't know what's taking Adobe and Fuji this long to provide RAW support, but it is certainly very frustrating to many Fuji X-Pro1 owners.

I have a love and hate relationship with the Fuji X-Pro1, which is unfortunate, because this could be such a phenomenal camera. On one side, the camera is compact, lightweight and produces stunning images. On the other hand, its autofocus system is terrible, manual focus is a pain and there are plenty of bugs and other issues. Similar to my experience with the X100, except the X100 had many of its issues addressed via firmware updates later on. I have no idea if Fuji is planning to make the X-Pro1 better the same way with firmware updates or not. Time will tell.

**1) Fujifilm X-Pro1 Specifications** Main Features and Specifications:

1. Sensor: 16.3 MP (1.5x crop factor), 4.8µ pixel size

2. Sensor Size: 23.6 x 15.6mm

3. Resolution: 4896 x 3264
4. Native ISO Sensitivity: 200-6,400
5. Boost Low ISO Sensitivity: 100
6. Boost High ISO Sensitivity: 12,800-25,600
7. Sensor Cleaning System: Yes
8. Lens mount: FUJIFILM X mount
9. Weather Sealing/Protection: No
10. Body Build: Full Magnesium Alloy
11. Shutter: Up to 1/4000 and 30 sec exposure
12. Shutter Control: Focal Plane Shutter
13. Storage: 1x SD slot (SD/SDHC/SDXC compatible)

14. Viewfinder Type: Hybrid Multi Viewfinder with 100%coverage in Electronic mode

15. Speed: 6 FPS

16. Exposure Meter: TTL 256-zones metering

17. Built-in Flash: No

18. Autofocus: Yes

19. Manual Focus: Yes

20. LCD Screen: 3 inch diagonal with 1,230,000 dots

21. Movie Modes: Full 1080p HD @ 24 fps max

22. Movie Exposure Control: Full

23. Movie Recording Limit: 29 minutes

24. Movie Output: MOV (H.264)

25. GPS: No

26. Battery Type: NP-W126

27. Battery Life: 300 shots, 900 in power save mode

28. USB Standard: 2.0

29. Weight: 400g (excluding battery)

30. Price: $1,699 MSRP body only

A detailed list of camera specifications is available at ***Fujifilm.com***.

**2) Camera construction and handling** Similar to high-end DSLRs, the Fuji X-Pro1 is built tough with a full magnesium-alloy frame. The difference though, is that the Fuji X-Pro1 has a thin layer of magnesium alloy, making the camera very lightweight when compared to a DSLR. As a comparison, the Nikon D800 weighs 890 grams, while the X-Pro1 weighs more than half less at just 400 grams. While the camera

is not designed to be weather-proof, I used it in very rainy conditions during my visit to London and the camera handled humidity and light continuous rain without any problems.

Handling-wise, I find the Fuji X-Pro1 to be great. The camera feels just right in hands and the lightweight Fuji lenses make the system very suitable for taking the camera everywhere you go. In my trip to UK, I decided to take the Nikon D800 with the 14-24mm and 24-70mm lenses, along with the Fuji X-Pro1 with 18mm

and 35mm lenses. I came back with a lot more pictures with the Fuji X-Pro1, because I just did not feel like lugging around with a heavy DSLR and two lenses in a camera bag. The Fujinon 35mm f/1.4 lens was pretty much glued to the X-Pro1 body, hanging off my neck, while the 18mm lens comfortably sat in my jacket pocket. When I needed to go wider than 35mm, I would swap lenses and shoot. Can't quite do that with the heavy D800. Even the ***Nikkor 50mm f/1.8G*** prime feels much bulkier and heavier in comparison…

The camera exposure controls are superb. If you have used a DSLR before and never touched a rangefinder, you might find yourself looking for a way to switch the camera mode from Auto/Program to Shutter Priority, Aperture Priority or Manual. Unlike a modern DSLR, there is no camera mode switch. And just to be clear, the Fuji X-Pro1 is NOT a rangerfinder

– it only feels like one because of its hybrid viewfinder, retro design and rangerfinder-like controls.  Here is how the camera looks from the top:


Fuji X-Pro1 Top

To change the camera to Shutter Priority, you simply rotate the top shutter speed dial located right next to the flash hotshoe (with a bunch of numbers going from “A” to 4000) to a desired shutter speed, while keeping the lens aperture ring at “A”. To change the camera to Aperture Priority, you leave the top shutter dial at “A”, while rotating the aperture ring to an aperture

of your choice. To change the camera to Manual Mode, you pick whatever aperture you want on the lens and pick whatever shutter speed you want on the camera. Super simple and very intuitive, just like on older rangefinders. The only downside is that you cannot go in 1/3 increments when changing the shutter speed – there is simply not enough space to fit so many numbers on the rotary dial. In Aperture Priority mode, however, you can use the exposure compensation dial to fine-tune your exposure in 1/3 increments.

In general, the layout and design of the back of the camera is good, but I do have a couple of complaints. Here is how it looks:

The two main complaints for me are:

1. AF focus point is changed by pressing the "AF" button that is inconveniently located to the left bottom of the LCD. I constantly


Fuji X-Pro1 Back

move the AF focus point when shooting, so this button should be elsewhere, or should be eliminated (see the next point below).

2. Why is the up arrow button (to the right of the LCD) dedicated to Macro feature? The arrow navigation buttons should be for changing the AF focus point, just like on Nikon DSLRs. I very much hope Fuji will make such choice available via a firmware

update – it should not be that hard to implement this button change. And if buttons change the focus point, it would be great if the “AF” button could become a programmable function button.

Operating the camera and navigating the menu system is a breeze, except when dealing with some design issues and nasty bugs. Here is a list of issues I have found so far:

1. **The On/Off switch problem.** In some

cases, the on/off switch does not work. I have had a few cases when I would turn the camera on and it would do absolutely nothing. The only thing you can do is move the switch to “Off” position and try again and then it works. I don’t know why this happens, but it is certainly annoying.

2. **The battery insertion issue.** Why does not Fuji learn from its prior mistakes? The battery on the X100 can be inserted in a wrong way and the Fuji X-Pro1 has exactly the same problem. All Fuji needs to do is shape the battery slightly differently on one side and the problem is solved.

3. **RAW shooting at boosted ISO levels.** Another X100 problem that never got addressed – why doesn’t Fuji allow shooting

RAW at boosted ISO levels such as ISO 100, 12,800 and 25,600?

4. **SD card writing problems.** The Fuji X-Pro1 seems to have a problem working with some SD cards, just like the D800. I have two SanDisk Extreme Pro 8GB SDHC Class 10 (45 MB/sec) cards and both of them have severe writing issues when using the Fuji X-Pro1. Sometimes it takes forever for an image to finish writing from the memory buffer into the card. If I hit the play button the camera goes into a freeze mode with a rotating square and just sits like that for a few minutes. Turning the camera off does not do anything and the only two things you can do is either wait, or take the battery out and insert it back. Fuji seems to be using the same SD module as the D800, since both

have the same problem with these cards.

5. **Tripod mount placement.** This issue is rather annoying, because the tripod mount socket is located off the center of the camera close to the battery/card compartment, making it painful to remove the card or battery while the camera is mounted. I use the Arca-Swiss quick release system and using a generic plate would keep the camera way off center. Hopefully a good custom plate from folks at ***Really Right Stuff*** will take care of this issue.

6. **Auto ISO feature does not allow setting a minimum shutter speed.** I understand this to be absent from point and shoot cameras, but for a camera worth more than $1500, ability to set minimum shutter speed should be there. Even the

X100 can do this. Also, why doesn't the camera allow to use Auto ISO at ISO 6400 and even ISO 12,800? High ISO noise performance is excellent, so the option should be there.

7. **Bad battery life indicator.** The battery life indicator on the camera is practically useless. I was happily shooting in London early morning with the battery indicator showing a "full" charge. Just after 10 or so shots, the camera went from completely full to blinking red "empty". Why should I have to keep track of when I charged the battery and count the number of images that I captured? This is a really bad bug that needs to be addressed ASAP.

8. **"Q" button issue**. Pressing the "Q" button on the back of the camera while view-

ing through the OVF/EVF shows on the LCD screen instead of the EVF.

9. **No option for different magnification levels when zooming in.** A simple fix would be to allow using the zoom in/out buttons on the back of the camera to switch between different zoom magnification levels.

10. **Firmware updates wipe out all camera settings**. Whenever you apply a firmware update, whether that is to the camera body or a lens, it wipes out all camera settings.

11. **AF issues.** The Fuji X-Pro1 has a list of AF issues – see the “Autofocus” part of this review (along with the pain of using manual focus).

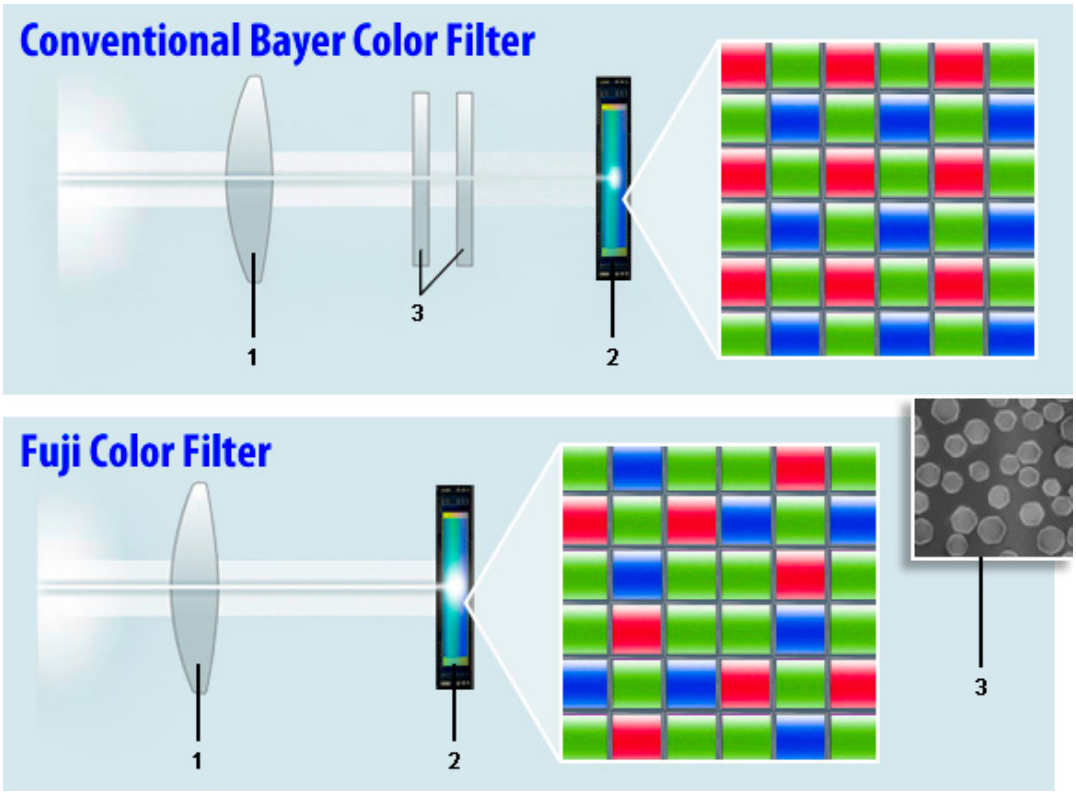
On the positive note, thanks to the recent firmware (version 1.01), the “aperture chatter” issue has been addressed, which was very annoying when operating the camera.

Just one more rant. The Fuji X-Pro1 has some great features like movie recording and panorama capture. But why doesn’t it have a simple intervalometer? The much cheaper ***Nikon 1 V1*** has one, so why can’t Fuji provide it? Again, this is something that can be done via a firmware update.


**3) Camera Sensor** At the heart of the X-Pro1 sits a brand new X-Trans CMOS sensor technology from Fuji. While traditional sensors with a repeating bayer-pattern color filter array exhibit ***moire problems*** and hence need an anti-aliasing filter to reduce moire by essentially blurring the image, the X-Trans CMOS sensor has a new color filter array that has a more random pattern that does not cause moire to occur in first place. Hence, an anti-aliasing filter is not necessary, which in turn translates to

sharper, more detailed images.

Here is an illustration of a traditional bayer pattern color filter array compared to the new Fuji color filter array:




Bayer Color Filter vs Fuji Color Filter

**Top image**: 1) Lens, 2) Sensor, 3) Optical low-pass filter.

**Bottom image**: 1) Lens, 2) Sensor, 3) Natural random arrangement of the fine grains of silver

halide in film.

As you can see, the difference between the two is quite big.

Fuji says that their sensor not only delivers sharper images due to the lack of an anti-aliasing filter, but also has better color reproduction. Does the new X-Trans CMOS sensor work as advertised? It certainly does, in my opinion. The amount of detail from the camera when using the Fujinon 35mm and 60mm lenses (more on lenses below) is impressive when looking at images at 100%. And as I have already written before, the colors from the Fuji are simply outstanding. As a long time digital Nikon shooter, I am very impressed by what the X-Pro1 does with the colors. Not only does the camera produce beautiful colors, but Fuji clearly knows how to process skin tones – something Nikon is historically not very good at. This is quite evident even when looking at JPEG images straight

out of the camera.

The X-Trans CMOS sensor with a new color filter is a great innovation. Sadly, most digital camera manufacturers today, including Nikon and Canon, still rely on the bayer pattern that was invented back in 1976 in Kodak labs. With all the new ultra high resolution sensors coming out, I believe manufacturers need to start adopting such innovations to get rid of the outdated anti-aliasing/blur filter.


## 4) Autofocus Performance and Accuracy

Here comes trouble. Fuji fans, get your rotten tomatoes ready, because you will probably want to use them after reading the next sentence. The autofocus system on the Fuji X-Pro1 sucks. Those who think otherwise, please give ***Nikon 1 V1*** a try and you will see what I mean. Seriously, after all that trouble with the X100, I really hoped that Fuji engineers would do something special with the AF system on the X-Pro1. From what I can tell, looks like the Fuji X-Pro1 was developed around the same time as the X100. So many issues from the X100 migrated over to the X-Pro1…even the ones that were fixed via firmware updates!

Here is a list of compiled AF issues I have so far:

1. AF is slow and accuracy is terrible in low-light.

2. In many cases, the camera takes too long

to acquire focus in AF-S (single) mode.

3. When re-acquiring focus, the camera will force the lens to start over and hunt for focus, even if the subject/object did not move at all.

4. After focus is successfully acquired, firing the shutter while continuing to half-press the shutter causes the camera to reacquire focus again.

5. LCD and EVF lock up / freeze between focus lock and exposure. The lag makes it difficult to photograph anything that moves. Surprisingly, this even happens when shooting in manual focus.

6. The AF-C (continuous tracking) mode is pretty much useless, since only the center focus point can be used for tracking

subjects. AF-C should be no different than AF-S in terms of focus points.

And a couple of rants on manual focus:

1. Focus ring is terribly slow – so many rotations are needed to get from far to close and vice versa. Since manual focus happens through the camera, there should be an option to speed up manual focus for each ring rotation. Perhaps some camera setting that allows doubling or tripling the

speed of focus change.

2. I am spoiled by the focus peaking feature on the Sony NEX cameras. Fuji should incorporate focus peaking to manual focus mode.

I tried photographing moving people and I was very disappointed with both AF-S and AF-C modes. AF-S obviously does not keep track of movement and by the time it acquires focus, the subject is already out of the focus zone. AF-C tracking with only one center focus point is too slow and unreliable. Take a look at this image that I captured in AF-C mode:

I tracked that guy with the center focus point for a while before firing the shutter (using the 35mm f/1.4 lens at f/2.8). As you can see, he is completely out of focus.

In short, forget about using this camera for anything that moves. While there is a known technique for manual focus lenses to pre-focus and then shoot from the same distance every time, I will to leave that with the Leica/Zeiss guys. This is a Fuji, and it has autofocus for a reason!

**5) Fujinon Lenses** Let's talk about the 3 Fujinon lenses that were released with the X-Pro1 – ***Fujinon 18mm f/2.0 XF R***, ***Fujinon 35mm f/1.4 XF R*** and ***Fujinon 60mm f/2.4 XF Macro***. It is interesting that Fuji only released prime lenses with the X-Pro1. This is certainly a welcome move for most pros out there and something I wish Nikon and Sony did with their mirrorless camera releases as well. Having plenty of zoom choices is good, but give us useful primes like 35mm f/1.4 first please! While I will be posting separate reviews of each of these lenses, here is a summary of what I think about them, individually.

1. The **Fujinon 18mm f/2** is my least favorite out of the three due to its focal length and distortion, but it has its uses when a wide angle perspective is needed. When Adobe releases support for the Fuji

X-Pro1 and its lenses, you will be able to fix distortion with a single click within the ***Lens Correction*** module. As for optics, its center performance is great, but the corners are rather weak, which is quite normal for a wide-angle lens.

2. The **Fujinon 35mm f/1.4** is a must-have for any X-Pro1 owner. I personally did not want to take it off the camera, because the focal point is just right, optics are phenomenal and the lens produces very colorful images with beautiful, creamy bokeh. It is insanely sharp from center to edge, even at f/1.4. As I have already said before, the 35mm focal length on a 1.5x crop factor sensor is just right.

3. The **Fujinon 60mm f/2.4 Macro** is an insanely sharp lens from center to corner. It is excellent for macro and portraiture work,

because it also renders beautiful bokeh when shooting at large apertures. With a lens hood attached it is the longest of the three and the heftiest.

In summary, all three lenses are superb, but if I wanted to pick one lens for the X-Pro1, it would certainly be the 35mm f/1.4.

What about lens handling and ergonomics? All three are very lightweight and compact for what they do, however, I do have a couple of

notes/complaints:

1. All lenses are fully electronic and there are no manual controls (except for the aperture ring). You cannot even force the lens to extend/collapse its barrel when the camera is off.

2. Lens caps are designed badly, especially the rubber ones that attach to metal hoods. I lost mine within a week, because it does not stay on.

3. None of the lenses, including the 60mm f/2.4 Macro are image-stabilized.

These are not major issues, but still worth noting. I believe the manual focus ring issue that I mentioned in this review can be addressed by a firmware fix, unless it is physically

impossible due to the way the motor works within each lens…

**6) Hybrid Viewfinder** The Fuji X-Pro1 has a similar hybrid optical (OVF) / electronic (EVF) viewfinder as the Fuji X100 with one difference – it is designed for two different magnification levels (“wide” and “standard”) depending on what lens is mounted on the camera. Switching between the OVF and EVF is done through the switch on the front of the camera, as illustrated in the below image:

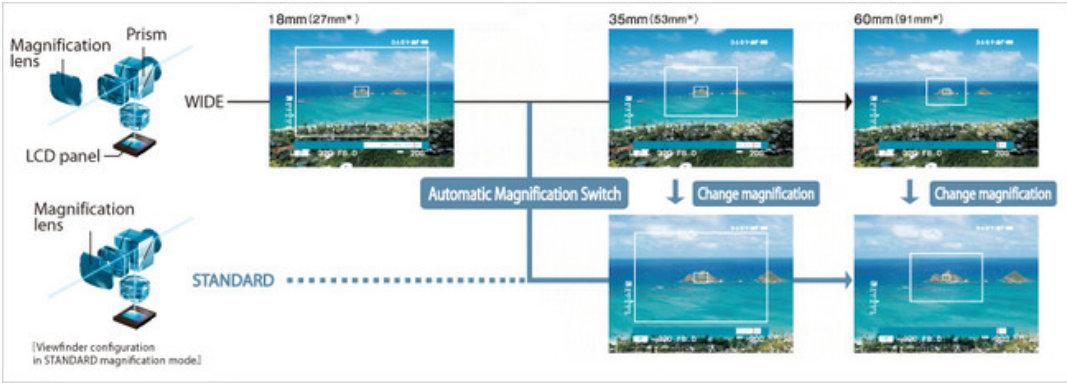

Fuji X-Pro1 OVF to EVF

In OVF mode (which is basically you looking through the viewfinder glass), the viewfinder has a bright white overlay that shows the ap-

proximate boundaries of the lens, along with some other useful exposure information. I loved this in the X100 and I also like it on the X-Pro1, although the shown boundaries are far from accurate and they sometimes jump from one place to another when half-pressing the shutter. Switching to EVF mode shows what the sensor sees through the lens, so the framing is fully accurate and more information is available to be displayed, including the histogram. The EVF is good, but not as good as the super high-resolution EVF on the ***Sony NEX-7*** camera.

When a short focal length lens is attached to the camera, such as the Fujinon 18mm f/2, the OVF operates in its “wide” mode (0.37x magnification). When longer focal length lenses are attached, the camera automatically switches to “standard” (0.60x magnification), which shows the subject closer, making it much easier to

compose your shot. Here is how the magnification levels work:




As with other mirrorless cameras with viewfinders, the camera switches from LCD to EVF when you look through the viewfinder. I really like this clever design of the hybrid viewfinder.

**7) Metering and Exposure** While the Fuji X-Pro1 does not have a sophisticated meter as the latest generation Nikon and Canon cameras, it actually works surprisingly well in most situations. The camera does have a tendency to overexpose and underexpose in unusual lighting situations, but that happens even with advanced DSLRs, so it is not anything unusual.

Gladly, the exposure compensation dial is right there on the top of the camera, so altering the exposure is a very straightforward process.

If you are a Nikon shooter, you will notice an odd behavior on the Fuji, similar to what Sony cameras do as well – when the shutter is half-pressed, metering gets locked by the camera. Trying to rotate the aperture on the lens or moving the exposure compensation dial will do nothing and the exposure will remain locked. The only thing you can do is release the shutter, then adjust your exposure, then half-press again to get a different meter reading. On Nikon DSLRs, once you half-press the shutter, you can still continue to adjust the exposure and the meter will continue to adjust automatically. This is not a big problem for me, since I do not mind releasing the shutter and half-pressing it again, but it might annoy others that are used to the Nikon way of things.

**8) Shooting Speed (FPS) and Battery Life**

The Fuji X-Pro1 is a pretty fast camera that can shoot at 6 frames per second. The good news is that when the camera is shot in burst mode, the memory card write process does not freeze the camera like it does with the X100. If you want fast writes, make sure to get a really fast SD card. I used some 45 MB/sec class 10 SD cards and there was definitely noticeable difference between them and ***SanDisk Extreme Pro*** 95 MB/sec cards. Also, as I have noted

already, some cards like the older SanDisk Extreme Pro SDHC (45 MB/sec) have compatibility problems with the X-Pro1, where the writing speeds can be extremely slow and frustrating and the camera becomes inoperable when trying to play an image or turn it off. When shooting in bursts, Fine JPEG images will shoot approximately 16-18 images before the buffer gets full. It then takes approximately 10 seconds for buffer to clear out and memory writes complete. If you shoot in RAW, the buffer will fill up at about 12-14 images and takes good 20+ seconds to clear out. These numbers are based on approximate calculations using the fastest SanDisk Extreme Pro SDHC 95 MB/sec cards. Slower cards will take even longer to empty the camera buffer.

In terms of battery life, the X-Pro1 specs state 300 shots before the battery runs out, which is in line with other mirrorless cameras.

However, there is one major problem as I have also noted above in this review – the battery life indicator in the camera is basically useless. It can go from solid full to empty in no time, so until a firmware fix comes out, get in the habit of charging your battery often and do not rely on this indicator.

**9) Video / Movie Recording** It seems like all modern digital cameras are coming out with movie recording options and the Fuji X-Pro1 is not an exception. It can record either 720p

or 1080p high-definition video at 24 fps with stereo sound and offers some control of exposure before recording (not during). Unlike DSLRs that have to have their mirrors flipped up, which limits viewing of video recording only on the camera LCD, the Fuji X-Pro1 can display recorded video both on its rear LCD and inside the hybrid viewfinder. You can choose a desired aperture, adjust exposure compensation and a few other camera settings, but you cannot adjust the shutter speed and ISO – those are chosen automatically by the camera based on the camera meter reading. There is also no external mic connectivity, so using an external audio recorder is not an option (unless it is done separately and then manually mixed later). Because there is no dedicated button or switch for recording videos, you have to go into the camera menu and change the drive mode from stills to movie and vice versa. In ad-

dition, there is no support for capturing images while recording a video. The really slow manual focus adjustment through lenses is frustrating when recording anything that moves relatively fast. I do not understand why the camera stops recording video when the shutter button is half-pressed. Half-pressing the shutter button should force the camera to reacquire focus, not to stop recording a video. Hopefully Fuji will also address this issue in future firmware updates, since I find it rather annoying. Lastly, subject tracking in AF-C (continuous) mode is also a source of frustration, not only because of a single center focus point, but also because tracking is very slow and inaccurate.

In summary, the video features of this camera are rather limited and buggy, designed for occasional capture of video, not anything serious.

**10) Flash** Like most top-of-the-line professional DSLRs, the Fuji X-Pro1 does not come with a built-in flash. However, similar to the X100, the X-Pro1 comes with a standard size hotshoe that can be used with Fuji's flashes such as EF-20, EF-X20, EF-42 and third party flashes and radio triggers such as ***PocketWizard Plus III***. In addition, there is a sync port on the left side of the camera, which allows you to hook up any strobe with a sync cable directly. This all means that the Fuji X-Pro1

is friendly with pretty much any professional studio strobe. Bear in mind that when using flashes, flash sync speed is limited to 1/180 of a second.

For me, having a standard hotshoe is a big plus, since I work in studio environments quite a bit. Here are some sample images taken in a studio with the X-Pro1:

**11) Dynamic Range** When it comes to dynamic range, from what I can tell from the JPEG images, the new X-Trans CMOS sensor seems

to deliver great dynamic range in photographs at even high ISO levels. It is no ***Nikon D800***, but from what I can tell, it looks pretty close to what the D7000 can do. I have not performed any scientific tests yet and it seems like folks at ***DxOMark*** have not performed their tests either, because there is no RAW support for Adobe products yet. Once RAW support is available, I will go back to my X-Pro1 RAW images and pull some details out from shadows to see what it is capable of.

See the next page for Fuji X-Pro1 ISO performance, along with comparisons to Nikon D800 and Canon 5D Mark III.

## ISO Performance

**12) ISO Performance at low ISOs (ISO 100-800, JPEG) Some technical junk:**

1. White Balance: As Shot
2. EXIF information is preserved in the images
3. Focusing was performed through Live-View Contrast Detect
4. Long exposure NR: Off
5. High ISO NR: Off

6. Image Format: JPEG

7. Imported images into Lightroom 4 and normalized to 16.3 MP resolution

8. Lightroom export: sRGB JPEG Quality 80

Here is the full image, showing which area of the image I cropped below:


Crop Area

Let’s take a look at how the Fuji X-Pro1 performs at low ISOs. Here are some crops at ISO 100 (boost), 200, 400 and 800:


Both are very clean, but the boosted ISO 100 looks much more overexposed when compared to ISO 200 for some reason. I would avoid using ISO 100 on the X-Pro1 for this reason.


JPEG output on ISO levels 400 and 800 looks as clean as ISO 200.

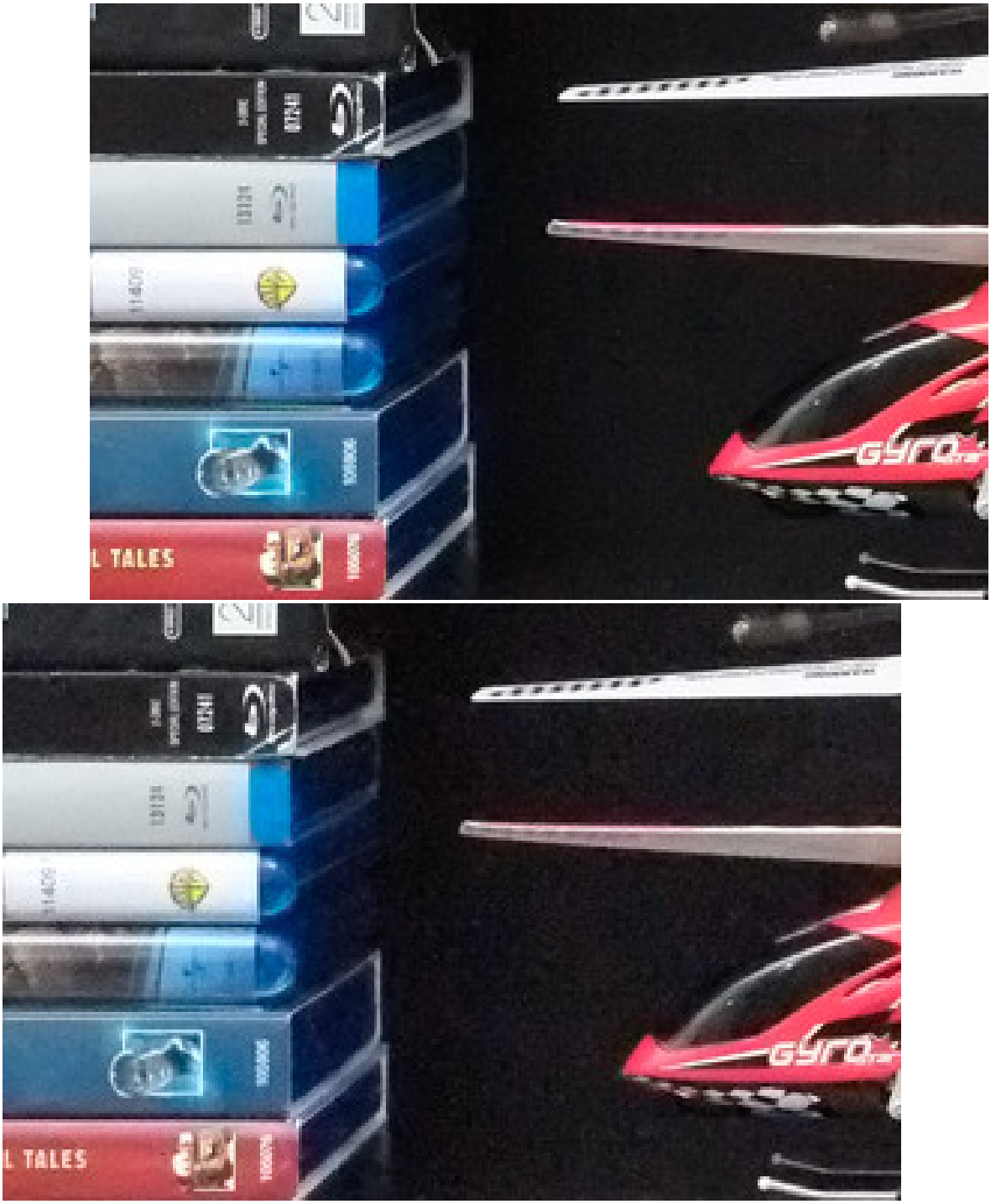
**13) High ISO Performance (ISO 1600-6400,**

**JPEG)** High ISO performance is a very important measure of sensor quality for low-light photography. Here is how the Fuji X-Pro1 performs at high ISO levels between ISO 1600 and 6400:


Again, going from ISO 800 to ISO 1600 practically does not add any noise to the image, even in the shadows. ISO 3200, on the other hand, adds a little bit of noise and here we can see the effect of noise reduction applied by the camera on JPEG images – clarity is slightly reduced as a result.


At ISO 6400 some details get washed away and we are starting to see some artifacts here and there. Still, the performance at ISO 6400 is excellent. Whatever Fuji does with its JPEG processing is very impressive.

**14) High ISO Performance “Boost” (ISO 12800-25600)** Fuji X-Pro1 has two extra ISO “boost” levels – ISO 12800 and ISO 25600 for extreme situations. Take a look at these:




Boosting ISO to 12800 results in more noise and much more aggressive noise reduction by the camera. Noise is apparent in the shad-

ows (although noise reduction makes it look a little “muddy”) and more artifacts are visible throughout the image. Still ISO 12800 is very usable in my opinion, especially when down-sampled. ISO 25600, on the other hand, looks too muddy and washed for my taste.

**15) ISO Performance Summary** While I am still waiting for RAW support from Adobe in order to do direct comparisons against Nikon D800 and Canon 5D Mark III, JPEG samples above show that the Fuji X-Pro1 is capable of excellent image quality at ISO levels all the way to ISO 12800. To date, I have not seen a camera that can render such beautiful, noise-free JPEG images – I am simply amazed by how good the JPEG output of the Fuji X-Pro1 is.

But I cannot speak for Fuji X-Pro1′s true sensor performance for now, especially in comparison to heavyweights like D800 and 5D Mark

III. That's because JPEG output is obviously rendered by the camera and noise reduction is applied. As soon as Adobe releases a new version of Lightroom and Camera RAW with Fuji X-Pro1 support, I will update this review with image crops that show RAW sensor performance.

## Camera Comparisons

**Camera comparisons will be provided when Adobe releases support for X-Pro1 RAW files** **Compared to Nikon D800** Let's see how the Fuji X-Pro1 compared to the Nikon D800 in terms of ISO performance. The image samples from the Nikon D800 are normalized to 16.3 MP for comparison.

**16) Fuji X-Pro1 vs Nikon D800 ISO Comparison at low ISOs** Take a look at the below crops at ISO 200, 400 and 800 (Left: Fuji X-Pro1, Right: Nikon D800):

**17) Fuji X-Pro1 vs Nikon D800 High ISO Comparison** What about high ISO levels above ISO 800? Let's take a look:

**18) Fuji X-Pro1 vs Nikon D800 Summary**

**Compared to Canon 5D Mark III** Let's see how the Fuji X-Pro1 compares to the Canon 5D Mark III.

**19) Fuji X-Pro1 vs Canon 5D Mark III ISO Comparison at Low ISOs 20) Fuji X-Pro1 vs Canon 5D Mark III High ISO Comparison** Let's see what happens at high ISO levels above ISO 1600:

## 21) Fuji X-Pro1 vs Canon 5D Mark III Summary  Summary and Image Samples

**22) Summary**  I got very excited when I read Fuji's press release about the X-Pro1, because it was clear from the announcement that the camera was specifically targeted at pros and photo enthusiasts that need a high-quality camera that rivals DSLRs in image quality, minus the bulk and weight. With excellent specifications, a beautiful and stylish black retro design, the camera looked like it had a great potential to be my full-time travel companion. Lugging around a heavy DSLR in a backpack is not always practical and I find myself leaving the heavy gear at home more often than I would like. I have been waiting for a great mirrorless camera for a while now and the X-Pro1 looked very promising.

I received the X-Pro1 around the same time when I received the ***Nikon D800*** and the Canon 5D Mark III. To be honest, my interest on the X-Pro1 was so big, that it was the first camera that I unboxed and I initially spent more time with it than the D800 and 5D MK III combined. After a few days of active use, I started to realize that it had a few problems that I would have to get used to… Don't get me wrong, the Fuji X-Pro1 makes phenomenal pictures. But it has a number of annoying bugs and issues that should have been addressed before the camera was released to the public. Writing this review, I knew that it would look very conflicting. In parts of the review I highly praise the X-Pro1 and in other parts I complain about its annoyances and problems.

I can live with most of its issues, but the slow and unreliable AF are hard to get by. If I only used the X-Pro1 for stationary subjects, land-

scapes, macro or architecture, I would probably be happy with it. However, I shoot all kinds of stuff, including plenty of indoors photography, so the autofocus part is rather critical for my work. So one either has to live with the X-Pro1 problems, wait and pray that Fuji fixes them sometime in the future with firmware updates (like they did with the ***Fuji X100***), or wait for the Fuji X-Pro2 to come out.

Given how many problems the Fuji X100 had when it was released, it just feels like Fuji released the camera prematurely. Surprisingly, many of the issues from the X100 that have been already addressed via firmware updates, made their way into the X-Pro1. Was Fuji working on the X-Pro1 and the X100 simultaneously?

I had such high hopes for the X-Pro1 – it has such a great potential to be a killer camera. If only it had a more robust AF system similar to the ***Nikon 1 V1***, it would have been “the travel”

camera for me…

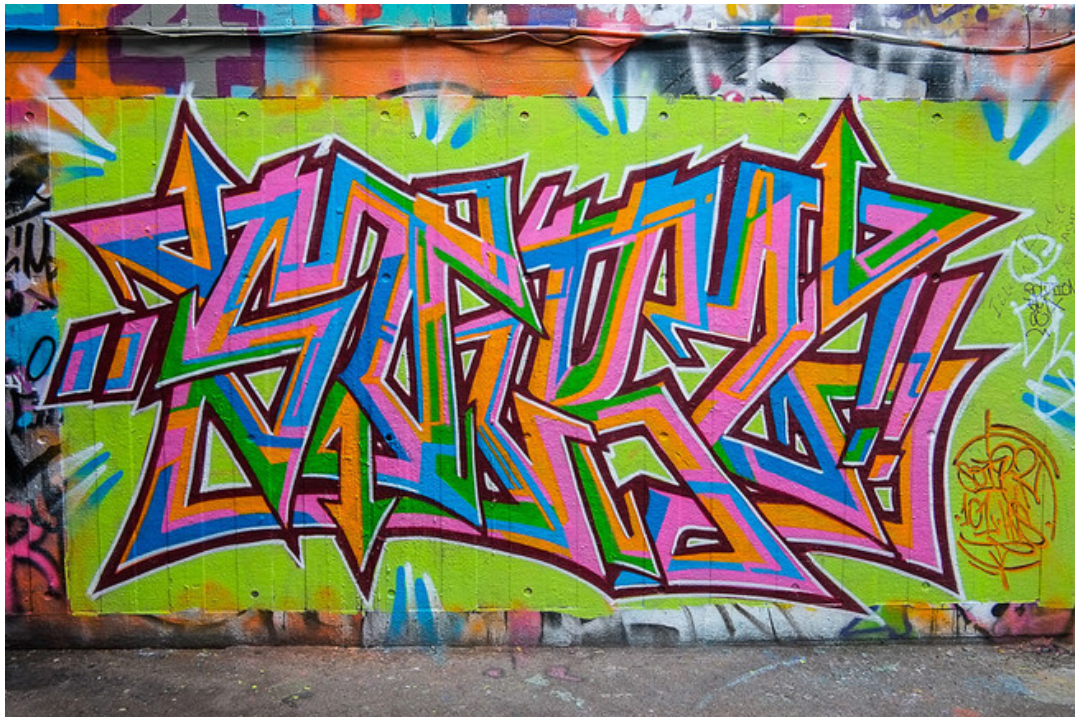
**23) Where to buy and availability** ***B&H*** is currently selling the ***Fuji X-Pro1*** body only for $1,699.

**24) More image samples**


M|O|M
x
DIAID


Sale


2012



the author.

# Selective Color Correction in Lightroom and Photoshop

In my previous ***Lightroom Dodging and Burning Tutorial*** I chose a photograph that had multiple issues. I addressed most of them in that tutorial but specifically left out one major issue (which was quickly discovered by one of our readers) to be a subject for fixing selective color in Lightroom and Photoshop. If you take another close look at the photograph I chose in that tutorial, the face of the model is visibly brighter than the color of the rest of her body. While in many cases our facial color tends to differ from the rest of our body, it can

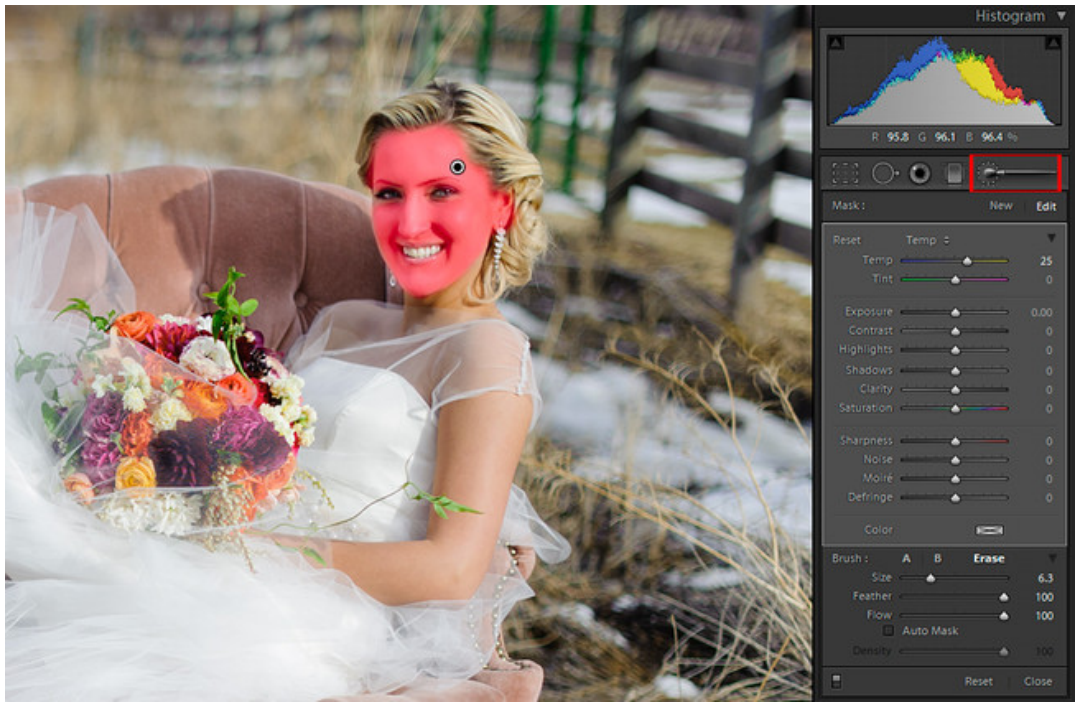
look rather awkward in photographs. Especially in this particular photograph, it is obvious that the foundation on model's face did not match to rest of her skin color.

If you have photographs like these, there are multiple ways of fixing them and these two methods could be used for a variety of other things. So, follow along to find out how I deal with such issues. First, I will show you how to do it in Lightroom, then I will also do the same in Photoshop.

**1) Selective Color Correction in Lightroom**

Thanks to Lightroom 4's selective white balance correction, fixing colors in a certain area is a very easy and straightforward process. Start out by using the Adjustment Brush and painting the affected area. In this case, I carefully brushed the model's face without touching her eyes and mouth. A quick tip: if you acciden-

tally over-brush, do not forget that you can simply press and hold the “Alt” key, and the “+” sign in the adjustment brush will turn to a “-” sign, which indicates that you can erase the over-brushed area. Keep holding the “Alt” key and carefully un-brush the area that you do not want to touch. Here is my selection:



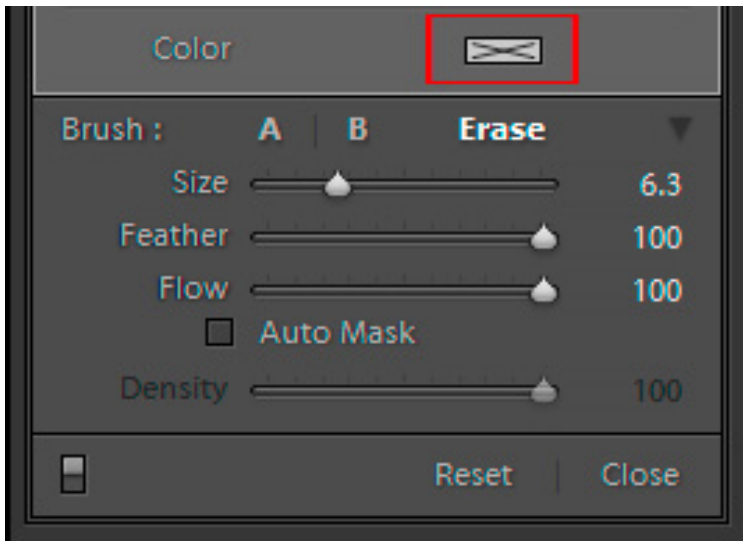

Once the area that needs color/skin correction is selected, simply start moving the “Temp” and “Tint” sliders until the color/white balance is adjusted to match the rest of the skin. In this case, values between 20 and 25 for Temp gave

me the best results. If you have a dual display setup, the changes will be immediately visible on the second screen. However, if you work with a single screen, then the best thing to do is to press the “O” button on your keyboard, which will hide the color overlay on your adjustment brush. Then once you move the sliders, you will see the effect immediately.

Here is the before and after:


If you are using an older version of Lightroom with no selective white balance correction, then you can use another method, which

also works quite well. Once you click the Adjustment Brush and the menu pops up on the right panel, click the X area right next to “Color”:




Lightroom - Color Adjustment

Once you do that, a new window will pop-up with a bunch of colors:

Now you have to select a color that you want to apply to the skin. The lower you go, the less the intensity/opacity of the color. Obviously, you have to be more careful with this tool, since you could introduce new colors to your photograph. However, if you do it right,

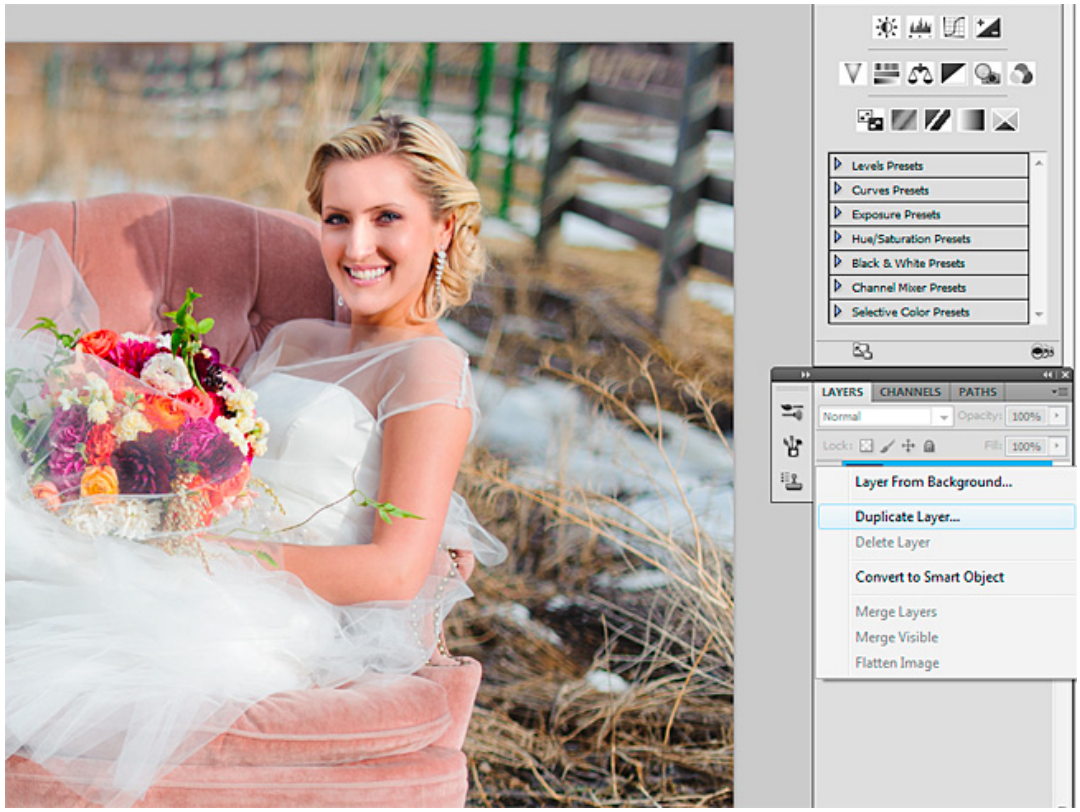

Lightroom - Select a Color

you could achieve a similar result as the above method.

**2) Selective Color Correction in Photoshop**

If you prefer to take this process to Photoshop, then here are the detailed steps to achieve the same or better result. First, start out by duplicating the existing background layer:

Now change the blending mode of the new layer to “Color” as shown below. This will allow you to paint over the affected area with a color of your choice and will make it easier to blend:

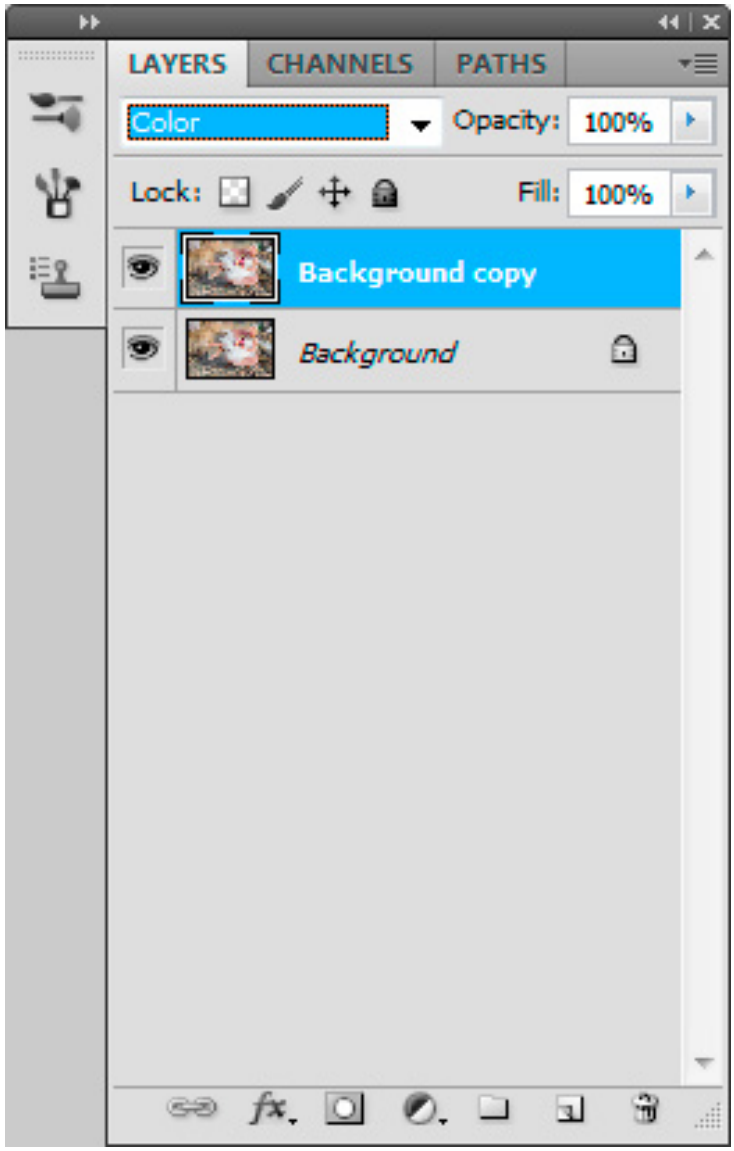



Photoshop - Duplicate Layer

Now select the brush tool from the left menu:

Then Alt+Left Click the area you wish to copy from in order to pick up a sample pixel. In our case I chose the brighter side of the neck area, avoiding areas close to her face and avoiding shadows.

By choosing the right brush size carefully



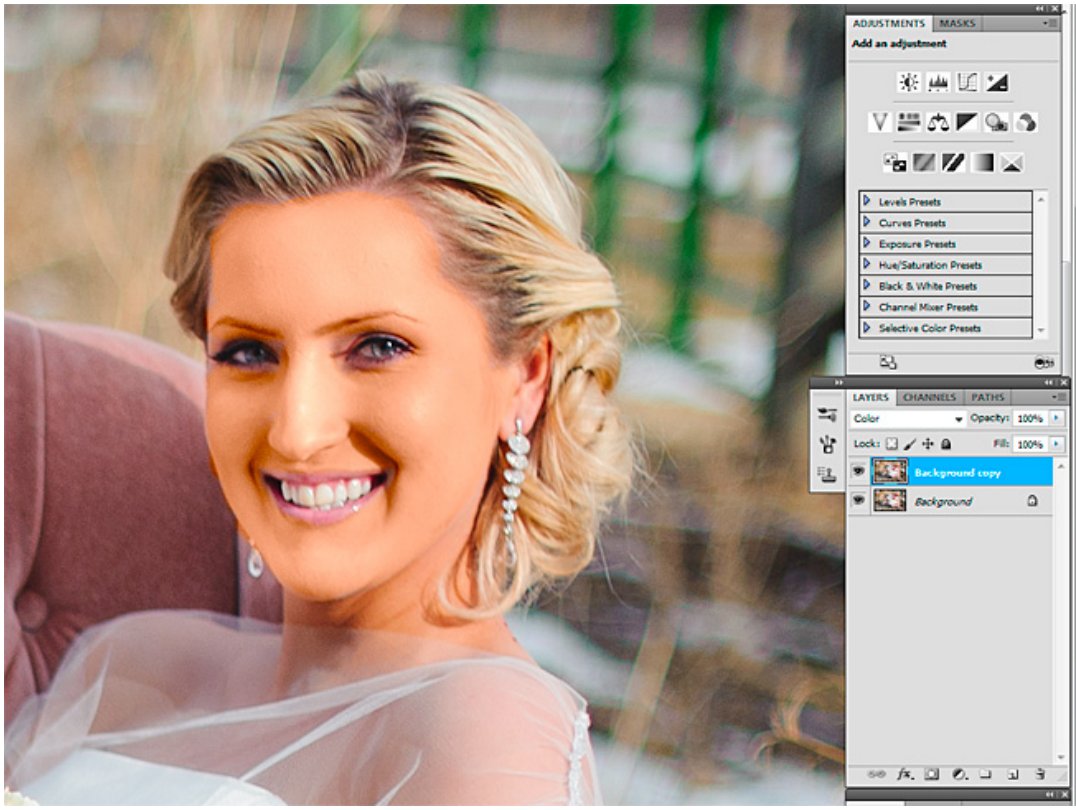

Photoshop - Color Blending Mode

paint over the area you are working on, avoiding painting any other areas (eyes, teeth, eyebrows, earrings, etc.)

Once done, reduce the opacity to a number

Brush tool 3

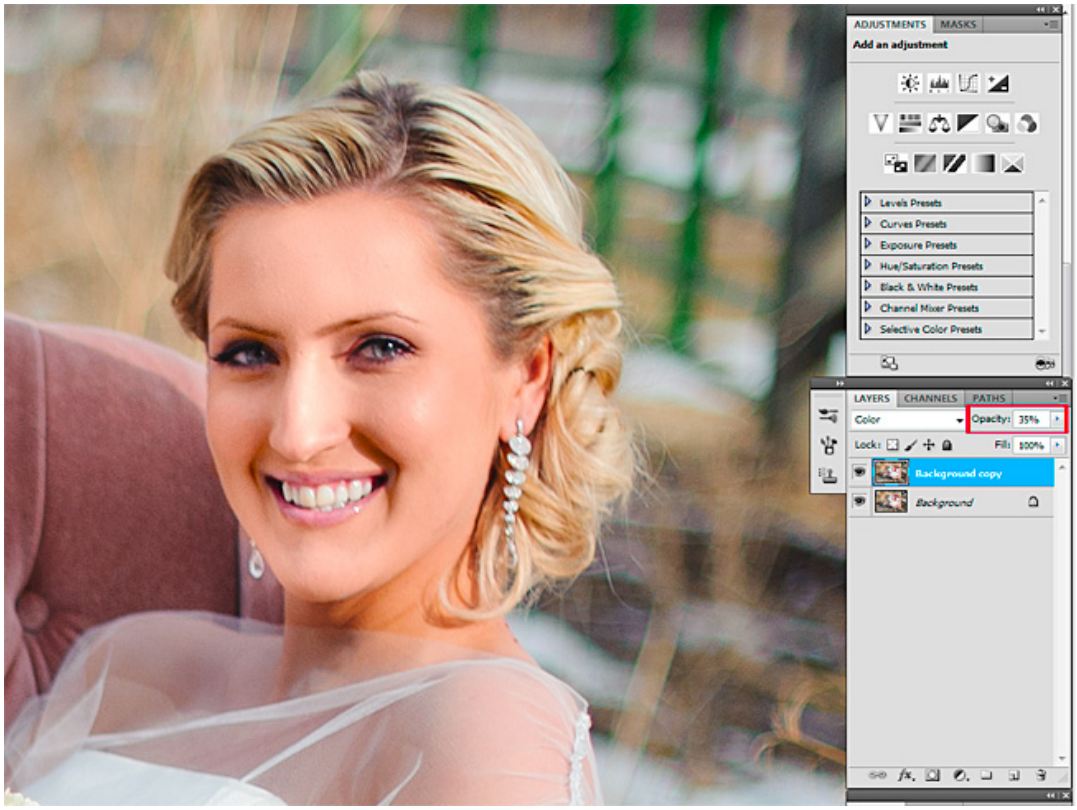
comfortable to your eyes, making sure you are close to the color of the overall skin color. I felt




Photoshop - Apply Color

comfortable at leaving the opacity at 15%for this particular photograph. Finally, flatten the image and examine it for any potential problems with the newly colored area.

So here is the image before:




# Photoshop - Change Opacity

And here it is after the above changes:

Hope this helps you a bit at solving similar problems you might encounter.

# Lightroom Dodging and Burning Tutorial

This is a simple tutorial on how you can utilize Lightroom tools to Dodge and Burn selective areas of a photograph to your liking without using Photoshop. During the process I will also go through some simple steps to show how you can enhance an image directly in Lightroom. I chose a sample portrait to show the process, because I often rely on Lightroom to do most of my post-processing work.

So, what is dodge and burn and where did these terms come from? Here is what ***Wikipedia*** says about it:

> Dodging and burning are terms used in photography for a technique used during the printing process to manipulate the exposure of a selected area(s) on a photographic print, deviating from the rest of the image's exposure. In a darkroom print from a film negative, dodging decreases the exposure for areas of the print that the photographer wishes to be lighter, while burning increases the exposure to areas of the print that should be darker.

The same technique can be used in digital photography to achieve similar results, although in Lightroom you can take the process even further by opening up shadows delicately and manipulating the exposure of certain parts of a photograph without ruining any details or colors. It goes without saying that working with RAW images gives a lot more opportunities to

recover lots of details, as explained by Nasim in his ***RAW vs JPEG*** article.

Here is the before and after comparison of what I have done to demonstrate the Dodge and Burn capability of Lightroom:


The before image is straight out of the camera with no adjustments:

First, I started off with identifying what needs to be done with this photograph and made sketches directly on the image. This method may not be practical while doing batch editing in Lightroom, but could be a good practice when doing selective editing for publishing. Some editing can be done to your personal taste and liking, while some photographs need more careful technical editing. Either way, knowing what you want from a photograph is very important and generally you will develop this skill overtime. Experienced photographers and post-processing gurus typically know right away what needs to be fixed in a photograph, while inexperienced ones generally overlook even important problems. Here is the image with my sketches identifying areas that need to be addressed to my liking:


And here is what each step stands for:

1. Areas where darkening/burning is needed.

2. Areas where lightening/dodging is needed.

3. Areas where dodging/opening up shadows is needed to be performed separately using a new brush. The reason why I took this extra step is due to the way brushes work in Lightroom. In Photoshop you can set different strength for each stroke of

a brush, while Lightroom cannot do that. Once you brush an area in Lightroom, you can only set a single value for the strength/opacity of a brush. If you need to set different opacity, you must add a new brush.

4. Finalize/condition the overall look of the photograph.

To selectively dodge and burn the image, I used the Adjustment Brush:

Adjustment Brush has an “Effect” drop down. When selected, it will show the below menu, from which you can locate the Dodge (Lighten) and Burn (Darken) functions for your use:

First, I am going to use the Burn function and highlight where burning is needed. Brush tool marks the stroked area in red (masking), and in Develop Mode preview you can see the

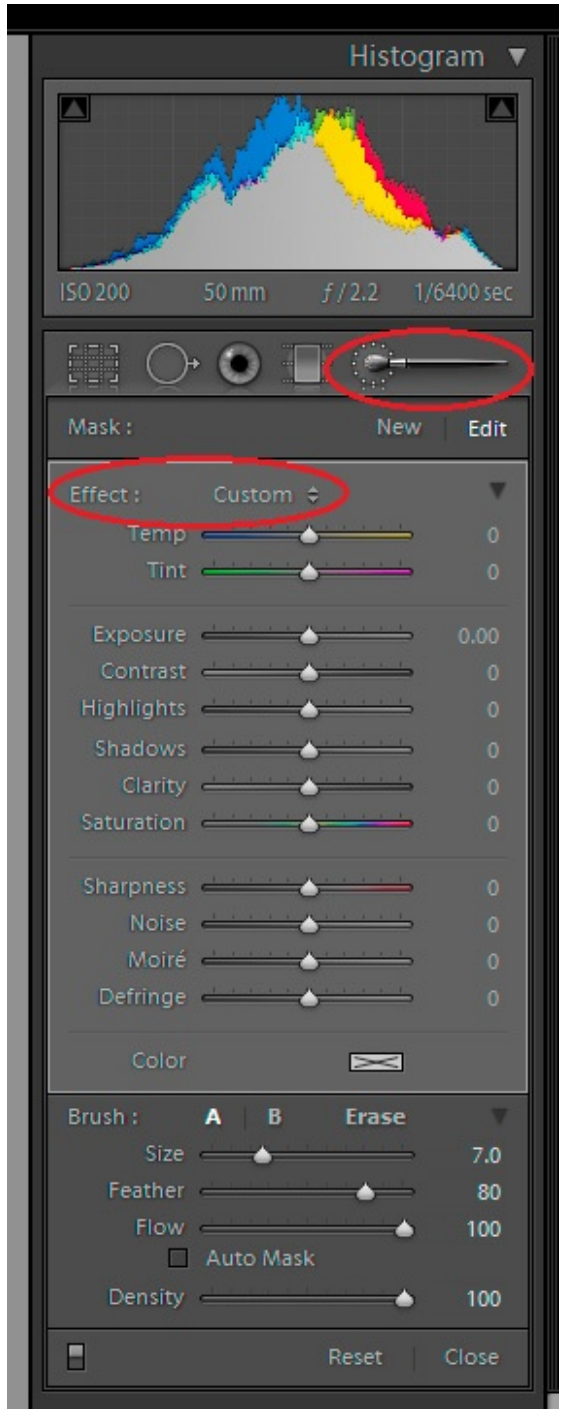
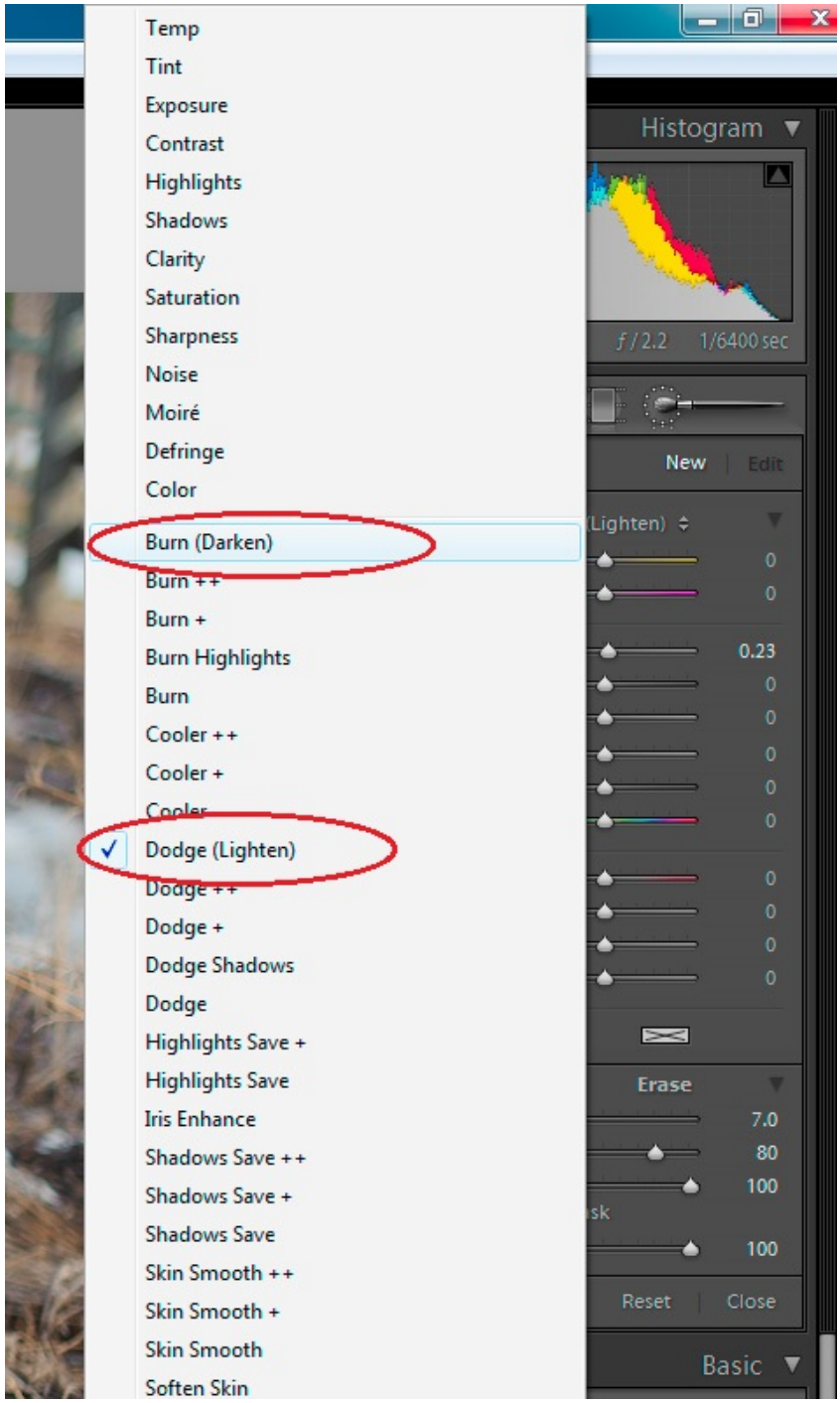



Image of Brush Menu

results of this action. I set “Exposure” to -0.49 and “Brush Feather” to 80. The size of the

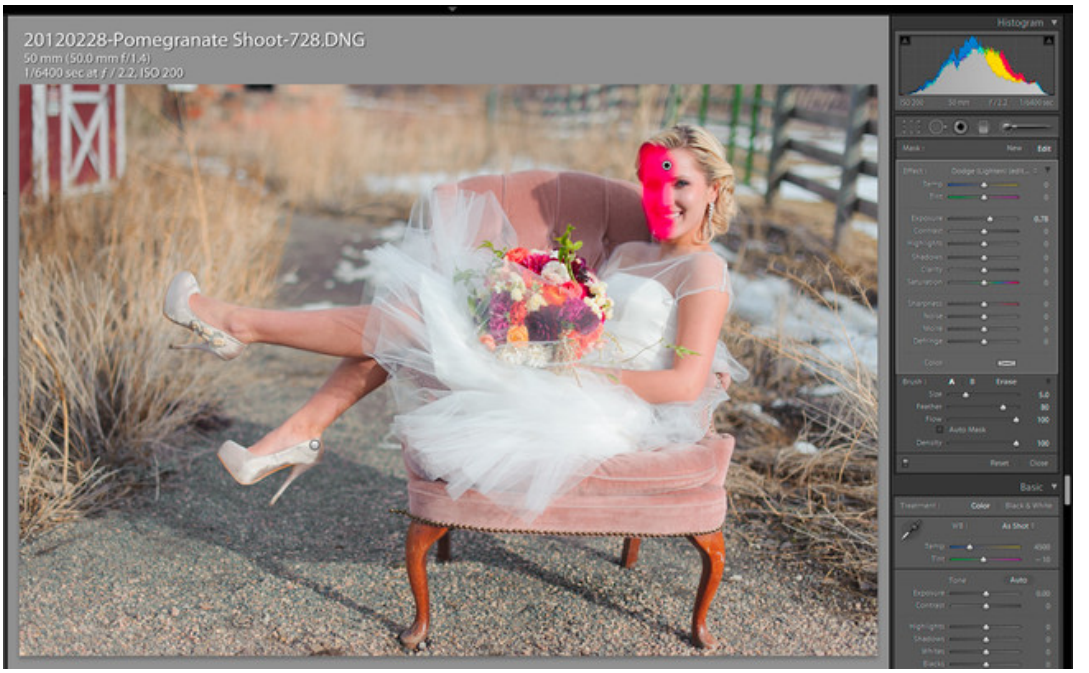



Imate of Dodge
and Burn location

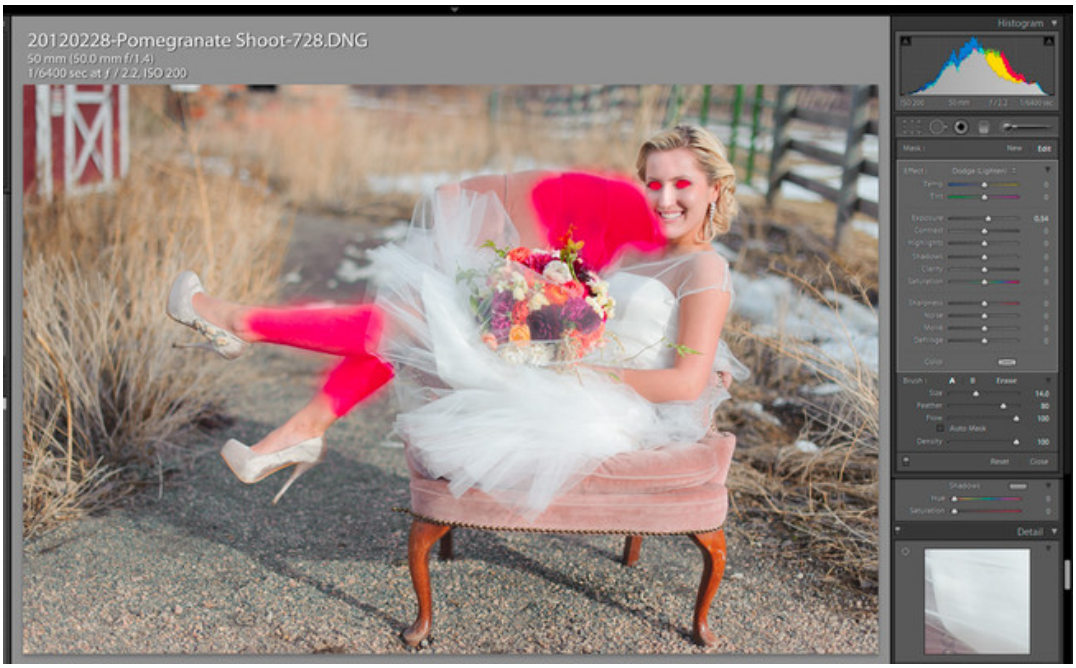
brush can be changed depending on the size

of the area that you need to select.

Once the above step is done to my liking, I hit Enter on my keyboard and click Adjustment Brush to Dodge the face of my model. Here, “Exposure” is set to 0.78:



The next step is to work on the eyes, legs and deep shadow on the chair by using the same Dodging method as above. The only difference is, this time I set “Exposure” to 0.54:



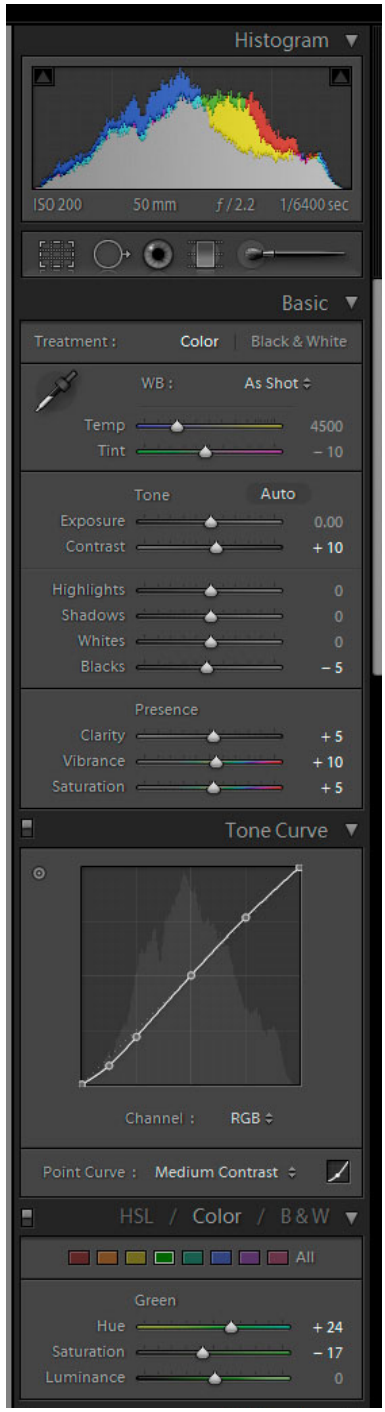

As soon as I am done with Dodging and Burning the photograph I set the following values:

- Contrast: +10
- Blacks: -5
- Clarity: +5

- Vibrance: +10
- Saturation: +5
- Tone Curve: Medium Contrast
- Green: Hue +24, Saturation -17
- Image Sharpening: 30%

Obviously, these values are what I picked to my liking for this particular image. Play around in Lightroom and choose what works best for your photograph.

And here is Before and After in full size:




Final adjustments

Simple changes make huge differences, and that’s without leaving Lightroom!

***See the next tutorial on how to fix the***

***above model's face color***.

Please let me know if you have any questions.

# Sharing Lightroom Catalog with Multiple Computers

Lightroom Icon

If you have more than one computer at your home to work on your photos with Lightroom, you might be wondering if there is a way to share your Lightroom catalog, so that you can work on the same images with the same cat-

alog on multiple computers at once. Unfortunately, the database system that Lightroom runs on (SQLite) limits the catalog to be used on a single computer, on a locally attached drive. Hence, simultaneously accessing a single catalog with multiple machines is not supported and will not work. On top of that, Adobe strictly forbids placing catalogs on network volumes, because it can result in all kinds of Lightroom database corruption issues (placing photographs on a network share is supported). In short, Lightroom is a “single-user” application with no support for multi-user access. While some people have been requesting a “multi-user” edition of Lightroom, Adobe currently has no plans to make such Lightroom version due to potential complexities of such software. True multi-user applications require a server and client infrastructure, which can be too complex for most photographers to set up and use.

So what are the options for using a Lightroom catalog on multiple computers? Let's take a look at some options:

1. **Keep a Lightroom catalog together with photographs on an external drive.** As long as the external drive is mounted on each computer with the same drive letter, makes the process very simple to manage. You attach a network drive to one computer, work on Lightroom, then dismount the drive and attach it to another to work from there. A relatively good solution if you have a home and work PC and need to be able to work on the same catalog, but with multiple machines at different times. Lightroom performance is somewhat slow, because the catalog, image previews and photos are all stored on the same drive and external drives are

typically slower in comparison to locally attached internal storage. The backup process is also simple – only the external drive needs to be backed up.

2. **Keep a Lightroom catalog on a local drive and manually copy the catalog between multiple computers, while storing photographs on an internal/external drive or a network share.** Requires designating one computer to be a “master”, which holds the latest and the most current version of the catalog. If another computer makes changes to the catalog, the catalog file must be copied back from that computer to the “master”, since regular backups are performed on the main machine for consistency reasons. Since either machine can potentially add new or update existing photographs (while

importing, moving or editing images), photographs must be stored separately in a common location either on an internal/external drive, or on a network share. This method allows to keep Lightroom catalog away from photographs for faster overall performance.

3. **Keep a Lightroom catalog on cloud storage such as *Dropbox* (with cloud storage client installed on each computer), while storing photographs on an internal/external drive or a network share.** Requires reliable and high-speed Internet connection when syncing. Dropbox only does incremental copy, which means that newly added data can be synchronized somewhat quickly between computers. However, one needs to make sure that Dropbox is set up to

only synchronize the Lightroom catalog (image previews should be excluded via “Selective Sync” feature on all computers). This solution can work relatively well, but there is a risk of having inconsistent data. Each machine writes its own data into the cloud and if the catalog is not fully synchronized between the cloud and the machines (due to slow Internet or Internet service issues), there is a risk of potentially losing data or changes to the catalog file. You must wait for synchronization to complete on all machines (upload and download) after closing Lightroom before opening the same catalog on another one.

Each method works just fine and I have tried all three. The first method was rather slow for me, so I opted for #2, which lets me keep the catalog file in a fast SSD drive, while accessing

photos from a mirrored RAID array. The RAID array volume is located on the main computer (as the “D” drive), which is shared with other computers via local network (all computers are connected to a gigabit switch). I mount the network share as the “D” drive on other computers, so that I don’t have to locate missing images each time when I copy the Lightroom catalog back and forth between computers. The #3 method with Dropbox can work well with smaller catalog files, but I just find it easier and faster to copy it from the master computer to other computers over the fast internal network.

No matter how you look at the process, it is still rather painful to use. I wish there was a simpler way to access Lightroom catalogs from multiple machines. Ideally, it would be great if a single catalog could be opened on multiple machines at once. Then all we would need to do would be to place photos in a common lo-

cation, so that all computers could read from and write to the same photo library. Unfortunately, with the way Adobe stores Lightroom catalog data today, it is impossible to achieve this currently…

# Nikon MC-36 Multi-Function Remote Review

After reviewing the ***Nikon ML-3*** Compact Modulite Remote and the ***Vello FreeWave Plus*** remotes with more basic features, we now turn our attention to the ***Nikon MC-36 Multi-Function Remote*** which has been kindly provided to us by ***B&H Photo*** – the world's largest photo and video equipment reseller where we buy most of our equipment.


**1) Features** The Nikon MC-36 can be used as a remote release, a delayed shutter release, programmed as an intervalometer or to activate the bulb fu