



The Newsletter of E.J. Peiker - Nature Photographer

Spring 2016 - Vol. 14, Issue 2
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Welcome to the quarterly newsletter from E.J. Peiker, Nature Photographer and www.EJPhoto.com. In this quarterly publication, I share with fellow photographers my photographic experiences, photo equipment reviews, photo and processing tips, and industry news. I also inform subscribers about upcoming workshops and products that I offer. Please feel free to forward this to other photographers and interested parties but please do so only by forwarding this newsletter in its entirety. All content is copyrighted by E.J. Peiker and may not be reproduced. If you would like to be added to the mailing list, unsubscribe, or access back issues, please visit: www.ejphoto.com/newsletter.htm



Everglades Sunset (Sony a7R II, Loxia 50mm)

New Gear Announcements

The first three months of the year always hosts a number of electronics, photography and videography trade shows. In line with these shows, the camera equipment manufacturers use this period for many new gear announcements. Let's take a quick look at some of the most notable cameras and lenses announced so far this year that might be of interest to the nature photographer.

Cameras

Every Leap Year brings with it an extra day in February, another edition of the Summer Olympics and the latest high end super fast shooting professional DSLR flagship cameras from Canon and Nikon 2016 is no exception to this trend. Canon introduced the EOS 1Dx Mark II and Nikon introduced the D5 action/sports orientes DSLRs. These cameras offer a very similar feature set. Here is a comparison:

Camera Feature	Nikon D5	Canon 1Dx Mk II
Pixel Count	20.8M	20.2M
Sensor Size	35.9x23.9mm	36.0x24.0mm
Pixel Pitch	6.45 micron	6.58 micron
Frame Pixel Dimensions	5568x3712	5472x3648
Anti Aliasing Filter	Y	Y
ISO Range	50-3,280,000	50-409,600
Viewfinder Magnification	0.72x	0.76x
Storage Media	Either 2 x CF or 2 x XQD	1CF + 1 CFast
Maximum Frames per Second	14 (12 with full AF and metering)	16 (14 with full AF and metering)
Buffer Size (14 bit lossless RAW)	200	170
Shutter Life	400,000 actuations	400,000 actuations
Metering System	180,000 pixel RGB 3D Matrix	360,000 pixel RGB
AF System	153 point, 99 cross-type	61 point, 41 cross type
AF Ev Range	-4 to +20 Ev	-3 to +20 Ev
Video Max Resolution	UHD 4K	Cinema 4K
Recording Limit in 4K	3 min	Card size dependent
4K max frame rate	30 FPS	60 FPS
LCD Resolution	2.4M dots	1.6M dots
GPS	External Option	Built In
Battery Life	3780 frames	1210 frames
Weight	1405g	1530g
Price	\$6500	\$6000

As you can see from the table above, on the still photography side, very little separates these two very expensive and excessively heavy cameras. On the spec sheet, neither camera has a significant advantage with the exception of battery life which is heavily in favor of the Nikon D5 and 4K capabilities which heavily favor the Canon. Other differences are minor with, on paper, a slightly better AF system for the Nikon and a slightly larger viewfinder and faster frame rate for the Canon. The Nikon boasts a much higher maximum ISO but the values for both cameras are very high and whether or not you would actually want to use those values is another matter as the image quality is absolutely horrible at the highest levels. On either camera, to reach the buffer limit one must use the fastest XQD cards (Nikon) or CFast cards (Canon). It is debatable if any of these differences matter materially in the field. On the video side, the Canon has a significant advantage. Nikon's ridiculous 3 minute limit for 4K video and no facility to shoot slow motion sequences in 4K makes it a non-starter in comparison. The Canon also offers the slightly larger Cinema 4k resolution rather than just UHD. Neither camera offers enough of an advantage over the other to entice

somebody to switch unless 4K video is a high priority. Quite frankly, you can get cameras costing a quarter of the price of these beasts that will do better 4K video so if that is your priority, you may want to look elsewhere anyway!

The Nikon will still have a measurable dynamic range advantage over the Canon but the Canon has a better overall line of lenses, especially on the non-telephoto side of things. Nikon cameras continue to offer more direct control of commonly used functions (like mirror lock-up, formatting cards, etc) without having to resort to menus or programmable functions than Canon cameras. Nikon does now offer automatic lens focus calibration which is a welcome addition.

For still photographers, in my opinion, neither camera offers a big leap over the previous models (Nikon D4s and Canon EOS 1Dx) but do offer some very nice evolutionary updates. To me, neither are worth \$6000+.

The high speed professional flagship cameras were not the only new cameras announced; there were several others. Most notable among the new cameras are the Nikon D500, the Sony Alpha 6300, and the Fuji XPro 2. Let's briefly look at each...

The D500 is the long overdue replacement of Nikon's pro-grade crop sensor professional camera, the D300S. While the two flagships above are the halo products for the big two, the D500 is the camera that stole the headlines, partly due to the surprise of its announcement and partly due to its extensive professional feature set. It is basically a D5 with a smaller body and a 1.5x crop sensor - or DX body in Nikonese. Let's take a look at a comparison table:

Camera Feature	Nikon D5	Nikon D500
Pixel Count	20.8M	20.8M
Sensor Size	35.9x23.9mm	24x16mm
Pixel Pitch	6.45 micron	4.22 micron
Frame Pixel Dimensions	5568x3712	5568x3712
Anti Aliasing Filter	Y	N
ISO Range	50-3,280,000	50-1,640,000
Viewfinder Magnification	0.72x	0.65x
Storage Media	Either 2 x CF or 2 x XQD	1 XQD + 1 SD
Maximum Frames per Second	14	10
Buffer Size (14 bit lossless RAW)	200	200
Shutter Life	400,000 actuations	200,000 actuations
Metering System	180,000 pixel RGB 3D Matrix	180,000 pixel RGB 3D Matrix
AF System	153 point, 99 cross-type	153 point, 99 cross-type
AF Ev Range	-4 to +20 Ev	-4 to +20 Ev
Video Max Resolution	UHD 4K	UHD 4K
Recording Limit in 4K	3 min	30 min
4K max frame rate	30 FPS	30 FPS
LCD Resolution	2.4M dots	2.4M dots
GPS	External Option	Built In
NFC & WiFi	N	Y
Bluetooth	N	Y
Articulating Screen	N	Y
Battery Life	3780 frames	1240 frames
Weight	1405g	860g
Price	\$6500	\$2000

As you can see, many of the key still photography specs are shared between the D5 and D500. I would argue that for the vast majority of photographers, even bird and sports photographers, 10 frames per second is not a significant disadvantage to the D5's 14FPS, and could be an advantage as it allows a longer shooting burst before the buffer fills and slightly more time for the AF system to calculate the subject's future position. On a D5, with the fastest cards, the longest burst is about 14 seconds while on a D500 it is 20 seconds. Very high ISO performance on the D5 is a bit better than the D500 but the difference is only about one stop. For many this will be an easy trade-off for putting way more pixels on a given subject from a fixed distance due to the APS-C sized sensor - not to mention that you could buy 3 D500's and have some change for other accessories or a lens before you could buy one D5. Finally, the D500 eliminates the pop-up flash of earlier models in exchange for a higher level of weather sealing and a larger viewfinder image.

Whenever I write camera feature reviews like this, I get asked what am I going to do as far as purchases are concerned... I have decided to wait on purchasing one of these and if I do, it will be the D500 to replace my D7200 as my primary wildlife body with a more rugged and pro featured cropped body. I would be more enthusiastic if I didn't need to take a 16% cut in pixels to change the D500 though I will never again pay more than \$5000 (in 2016 dollars) for a camera that isn't medium format or very revolutionary in its capabilities so the D5 is a non-starter for me on the basis of cost and weight.

The last camera I purchased for a price above that was the D3x and it was quickly eclipsed by the much less expensive Nikon D800 and D810. Why am I waiting on a D500 purchase decision? Nikon's recent track record is very poor. In the last few years, most new Nikon bodies have had initial problems that required either a recall or outright replacement. The D600 had a major sensor oiling



Salt River, Arizona (a7R Mk II, Loxia 35mm)

problem that was never fully repaired and led to the premature introduction of the D610 which redesigned the mirror box to prevent this. The D750 continues to have problems with light leaks. The D800 and D800E had 1 in 5 cameras shipped with serious autofocus problems when using AF sensors on the left side of the screen. The D810 was recalled due to an embedded firmware issue that rendered long exposure noise reduction largely inoperable. With this poor track record over the last few years, it is prudent to wait for a couple of months after mass market shipments start to make sure that there aren't any significant problems.

The next camera that made a major splash was the long awaited Fujifilm X-Pro2. This camera finally upped the pixel count of the excellent Fuji APS-C sensed line to 24 megapixels. Like the X-Pro 1 it is a rangefinder style camera that has both an optical and electronic viewfinder option. It is a refined version of the X-Pro 1 in many ways including upping the LCD resolution, improving its weather sealing and low temperature operation capability, adds a 169 on-sensor phase detect autofocus system, 1/8000s mechanical shutter speed capability and 1/32000 second electronic shutter speed. 1080/60p video has been added along with dual card slots, more customizable controls and direct AF point selection (a major

shortcoming in most mirrorless cameras). Overall the X-Pro 2 is an excellent update of the now 5 year old X-Pro 1. As I have written before in this newsletter, I am a huge fan of the Fujifilm X-T1, which was a more DSLR styled and featured follow-on to the X-Pro 1 with the best user interface on a camera since the days of film DSLRs. It is absolutely my favorite camera on the market from a usability standpoint for an old school photographer like myself that shoots almost everything in manual exposure mode. Having every control that one would need during a shoot available as a direct button or dial placed in the proper position and never having to enter an arcane menu system returns photography to pure joy rather than Computer Science 101 every time you want to use the camera. I am hoping that Fuji quickly migrates the improvements made in the X-Pro 2 to a new X-T2. Coupled with Fuji's phenomenal lens line, a camera like the X-T2 would be the nearly perfect camera - well, except for the proprietary X-trans filter array on its sensors which replaces the standard Bayer array with a different color array that I personally feel is completely unnecessary and needlessly complicates the RAW conversion options and quality. Let's not forget that Fuji has the best line of mirrorless lenses on the market to complement their cameras. Give me a Bayer sensor XT-2 and I might just flood eBay with a bunch of Sony and Nikon ...

The last notable camera that was introduced in the first quarter of this year is the Sony a6300. this is a follow-on to the most successful mirrorless camera ever, the a6000. This camera is a powerhouse of features in a small body that is almost identical to the a6000 before it. Here is a comparison table:

Camera Feature	Sony a6300	Sony a6000
Pixel Count	24.2M	24.2M
Sensor Size	24x16mm	24x16mm
Pixel Pitch	3.91 micron	3.91 micron
Frame Pixel Dimensions	6000x4000	6000x4000
Anti Aliasing Filter	N	Y
ISO Range	100-51,200	100-25,600
LCD Resolution	921K dots	921K dots
Viewfinder Resolution	2.4M Dots	1.4M Dots
Viewfinder Magnification	0.70x	0.70x
Storage Media	SD	SD
Maximum Frames per Second	11 (8 with live view)	11 (no live view)
Buffer Size (14 bit lossless RAW)	200	200
Maximum Shutter Speed	1/4000s	1/4000s
Metering System	1200 zone -2 to +20 Ev	1200 zone 0 to +20 Ev
AF System	425 point OSPDAF, Eye AF	179 point OSPDAF
AF Ev Range	-2 to +20 Ev	0 to +20 Ev
Video Max Resolution	UHD 4K, 30 FPS, SLOG 3, 1080/120P	1080/60P
Recording Limit	30 min	30 min
4K max frame rate	30 FPS	N/A
Mic Input	Y	N
Headphone Jack	N	N
GPS	N	N
NFC & WiFi	Y	Y
Articulating Screen	Y	Y
Build	Full Magnesium	Partial Magnesium
Weather-sealing	Y	N
Battery Life	400 frames	420 frames
Weight	404g	344g
Price	\$1000	\$600

The a6300 offers many improvements and refinements over the a6000 as can be seen in the table above. For the still photographer, the improvements revolve around the vastly improved AF system that sports a whopping 425 on sensor phase detection points covering the entire frame. This allows the camera to rival even mid-range DSLRs for moving subject tracking. The a6000 broke ground in this area a couple of years ago by outperforming an EOS 5D Mk II for tracking accuracy and this new camera takes the game up several notches. While the basic sensor specs are the same, this is a completely new sensor using more modern semiconductor manufacturing technology which results in about a 1 stop improvement in noise. Video capabilities are in a completely different league than the a6000 adding sophisticated 4K options - basically a superior 4K camera to even the \$6500 Nikon D5 for \$1000. A two axis level was also incorporated, the auto bracketing options are no longer handicapped and the auto ISO options are now full featured including minimum shutter speed settings. On the negative side, the a6300 still does not offer direct AF point selection, you have to hit a button first and then navigate the focus point to your desired location unlike the Fuji camera reviewed above. It is also sorely lacking a headphone jack for a camera with this level of video capability and a camera like this at this price point should have a touch-screen. The lack of In-body image stabilization is also a shortcoming and flash sync is a somewhat paltry 1/160 sec.

I have been using the a6000 for about one and a half years as my take everywhere camera. I will likely replace it with the a6300 once the price comes down significantly, which usually happens within about 9 months on this type of camera. While it is \$1000 now, by Cyber Monday in November I expect it to be about \$800 and the same day in 2017 should see it drop to the \$600 range for body only. Sony has taken another step in closing the gap between prosumer DSLR's and mirrorless cameras with the a6300. It is getting scarily close to an EOS 7D Mark II level of performance and it has a dramatically better sensor, weighs a whole lot less and costs 40% less.



Haunting Half Moon Bay, Antarctica (D3x, 24-70mm)

In addition to the cameras outlined above, there were also a few notable lens announcements. The most significant of these is Sony's announcement of a new ultra high end lens line for the full frame E-mount cameras like the a7 series. The 24-70mm f/2.8 and 70-200mm f/2.8mm G-Master lenses will soon be available to further round out the Sony a7 line as a true professional line. Additionally an 85mm f/1.4 G-Master lens and 1.4x and 2x teleconverters for the 70-200 f/2.8 were introduced by Sony. These lenses check off one of the short-comings of the Sony system that I outlined in the last newsletter. They are designed, not only for today's 42 megapixel generation of sensors, but also future much higher resolution sensors. Expect prices to be stratospheric with pre-orders for the 24-70 being priced at \$2200-\$2400 and pre-orders for the 85mm f/1.4 priced at \$1800. Fujifilm introduced a 100-400 f/4.5-5.6 lens for the Fuji X system priced at \$1900.

Finally, in an announcement that will have essentially no impact on the North American market but may have some impact in Asia, is Pentax's announcement of their very highly specified full frame 36 megapixel DSLR, the K-1. At an incredible price of \$1800 it significantly out-features the Nikon D810.

The Loxia 21mm Lens Arrives

Last quarter I wrote about my love affair with the Zeiss Loxia line of small but incredibly high resolution of full frame Sony E-mount lenses. I have since spent a lot more time shooting with the 35mm and 50mm Loxias and my enthusiasm only grows.

Virtually all of my non-wildlife photography since the last newsletter has been conducted using the Loxia lenses. They absolutely obliterate the image quality of the E-mount zooms that cover the range and are such a joy to use with their smooth fully manual controls including a real aperture ring while being fully coupled electronically to the camera allowing very easy focus with all of the manual focus aids built into the Sony a7 line of cameras including automatic magnification the second you touch the focus ring. Recently, I received the just released Loxia 21mm f/2.8 lens. This lens continues the tradition of stunningly good optics in a tiny, relatively fast aperture prime lens with a very economical 52mm filter thread. While some reviews have stated that it is even sharper than the exceptional 21mm f/2.8 ZE and ZF2 prime lens for Canon and Nikon respectively, I would not make that claim but I would say it is every bit it's equal while weighing almost half as much and being physically much smaller (* See **NOTE** below). Edge resolution is fantastic with the



Long Pine Key Lake, Everglades, FL (a7R Mk II, Loxia 50mm)



Goldfield Mountains (a7R Mk II, Loxia 21mm)

little Loxia 21mm and the center is as good as it gets. There is no noticeable chromatic aberration even at very high contrast edges in the corners. Like all Loxia lenses, the aperture ring can be de-clicked which is very useful if you need very smooth aperture transitions in videography. As is the case with almost all Zeiss lenses, if there is one thing to complain about it is the light fall-off in the corners. Fortunately this is easily corrected. I have recently started creating my own lens profiles for light fall-off and color variation across

the frame so it is pretty much a non-issue (This is something that is easily done with Capture One's LCC profile function and very difficult, by comparison, with Adobe software). The other common complaint with the Loxia lenses is that due to their compactness there is very little lens barrel that isn't either part of the focus ring or the aperture ring which makes it hard to find a place on the lens to grab that doesn't move. When you couple this with the grippy nature of the blue weather sealing ring at the base of the lens mount, it can be a little difficult to get a solid non-moving grip on the lens to mount and dismount the lens.

* **NOTE:** In my case the comparison of the Loxia to the ZF.2 lens may not be fair to the Loxia since my 21mm Nikon mount 21mm ZF.2 lens was hand tuned and adjusted by a senior technician at Zeiss in Germany with 20 years of lens tuning experience. Due to this it has perfect centering and exceptional center to edge performance - it is clearly better than a standard new lens like this based on extensive testing. As a result of this, it is even more impressive that the Loxia is it's equal. (I will soon be selling this **hand tuned Nikon mount Zeiss 21mm ZF.2 lens in exceptional condition optically and cosmetically** since I no longer use the Nikon system for landscape photography - if interested, please send me an email - Price is \$1350 shipped in the 48 contiguous states).

Mid Day Photography - Try Infrared!

In the summer when the sun comes up as early as 5:00AM in some parts of the 48 contiguous United States and can set as late as 10:00PM, there are a lot of hours between prime morning light and prime evening light. The traditionally "too harsh to shoot" period of the day can be as much as 14 hours long. While this is a good time to scout, eat, sleep, and work on images, it can also be a good time to explore a different genre of photography. For the last two years, I have sometimes used this time explore infrared photography.

In normal color or black and white photography, you are using a sensor or film that is sensitive to light in the visible spectrum or the spectrum of light that is visible to the human eye. This extends from violet with a wavelength of about 400 nanometers (nm) to deep red with a wavelength of around 700nm. The infrared spectrum (or near infrared in scientific terms) starts where the visible light spectrum ends at about 700nm and goes up to about 1400nm. Wikipedia has a very good and concise explanation of Infrared photography:

https://en.wikipedia.org/wiki/Infrared_photography.

For photographers, as the sun get's higher in the sky, more infrared energy is available to photograph and some of the things we attribute to traditional IR photos, such as white foliage and very dark skies are maximized. Some of the most dramatic infrared shots are taken in the middle of the day.

Equipment for infrared photography can be as simple as an infrared filter placed on a lens that is mounted to a camera but this can result in very long exposures



McKee Gardens, Florida (D7100 - 720nm IR, 16-85mm)

and doesn't work with all cameras. A better way to go is to convert a normal camera to an infrared camera. There are several companies that do this conversion; many photographers have converted older bodies. The most well known companies that offer this conversion are Lifepixel and MaxMax. Both companies remove the cover filter on your existing sensor and replace it with an infrared filter. Typical cost is in the \$300-\$400 range. They offer an array of conversion options from filters that allow both visible light and infrared to be recorded (partial color and full color plus IR), to full spectrum infrared (715 or 720nm filters), to deep infrared options in the 800nm and above region, to super deep IR in the 1000nm region. If you like some of the strange looking false color IR photos, you will want one that allows a bit of the visible spectrum through such as a 600nm range filter and if you prefer the final outcome to be black and white, using either a 700nm range filter or an 800nm range filter for even higher contrast are good choices.

I chose to convert my old Nikon D7100 camera to 720nm IR, thereby, allowing me to record the entire IR spectrum and just a tiny bit of the visible light spectrum which creeps in too since filters roll off rather than step off at a certain wavelength. I also did some research on lenses that will work well with infrared and

ended up with a like new used Nikon 16-85 f/3.5-5.6G VR lens from eBay. One has to be sure when deciding on a lens for IR that it does not produce hot spots. There are a number of online sources that have this information, here is one such site:

<http://kolarivision.com/articles/lens-hotspot-list/>.

When photographing the infrared spectrum, it is important to note that IR light focuses in a different plane than visible light.

Companies such as Lifepixel and MaxMax do offer a service to recalibrate lenses to properly AF in the IR portion of the spectrum but this typically means they are accurate only at one focal length of a zoom lens.

For this reason, I exclusively use Live View focus when shooting in infrared as the focus is done directly on the sensor. For example, even with my 16-85 Nikkor lens that is properly calibrated for IR at 85mm, when set to 16mm, infinity focus is achieved when the distance scale on the lens says just 5 feet. This is the lens that I use primarily for IR photography due to having no hot spots or dead spots for IR light transmission.



Sonoran Desert Preserve, Arizona (D7100 - 720nm IR, 14-24mm)

Processing infrared images can also be a challenge, especially color infrared. Adobe users can not white balance IR files properly as the allowed adjustment range of color temperature and hue is not enough to render a neutral tone neutral. Other RAW converters including Canon's DPP, Nikon's Capture NX-D, Phase One's Capture One Pro, etc can do a proper white balance. Once the image is white balanced and RAW converted to your liking, if you plan on leaving some color in the image, one must first reverse the blue and red color channels by going into the Channel Mixer in Photoshop and setting the red channel from 100% red to 100% blue and changing the blue channel from 100% blue to 100% red. This will change the sky from red to blue. One can easily record an action and assign it to a Function key for very fast color channel reversal with a single key press. If you plan on a black and white rendering of the IR image than you may

be able to skip the color channel swap step but I still do it as other adjustments act more in the way that we are used to (such as filters during black and white conversion). Much more on all of this can be found online. The Lifepixel site is a good resource which also includes some instructive videos.

Having an infrared enabled camera allows you to shoot dramatic photos in the middle of the day and dramatically increases the hours available to you for photography with images where foliage glows and skies that are a deep contrasty gray or even black. The degree of contrastiness is really up to you and can be manipulated in post processing. It gives you something to do during the middle part of the day and teaches you to see the world in a different light - literally - in infrared light.



Long Pine Key Lake, Everglades, FL (D7100- 720nm, 16-85mm, 6 stop ND)

The Best Lenses For Your Nikon DSLR, Canon DSLR, and Sony (FE) Cameras

I continue to get dozens of emails, calls, texts Facebook Messengers communique's per week asking me to recommend a lens. I am very fortunate to get to try a lot of gear and from this I keep the table below of the best lenses for the Canon EF, Nikon F and Sony FE mount systems up to date and include the latest version in every newsletter. There are of course other great lenses but these are the best of the best. A trend over the last couple of years, with the increasing ascension of Zeiss and the incredible Sigma Art line, is the slow disappearance of Canon and especially Nikon lenses from the best lenses available list. The OEM's still dominate in the telephoto arena but in the wide to standard arena, they are getting beat handily. A few additions and changes were made this quarter. The only change of note this month is the addition of the Zeiss Otus 28mm lens. changes this quarter but recent announcements like the Sony G-Master line are sure to create some changes next quarter.

Lens Category	Canon EF Mount	Nikon F Mount	Sony (F)E Mount
Ultra Wide Prime	Zeiss 15mm f/2.8 ZE Canon TS-E 17mm f/4	Zeiss 15mm f/2.8 ZF.2	N/A
Extra Wide Prime	Zeiss Milvus 21mm f/2.8 Sigma 20mm f/1.4	Zeiss Milvus 21mm f/2.8 Sigma 20mm f/1.4	Zeiss Loxia 21mm f/2.8

Standard Wide Prime	Zeiss Otus 28mm f/1.4 Zeiss Milvus 25mm f/2 Sigma 24mm f/1.4 Art	Zeiss Otus 28mm f/1.4 Zeiss Milvus 25mm f/2 Sigma 24mm f/1.4 Art	Zeiss Batis 2/25 Sony 28mm f/2
Moderate Wide Prime	Sigma 35mm f/1.4 Canon 35mm f/1.4L II	Sigma 35mm f/1.4 Tamron 35mm f/1.8	Sony-Zeiss 35mm f/1.4 Zeiss Loxia 2/35
Standard Prime	Zeiss 55mm f/1.4 Otus Sigma 50mm f/1.4 DG Art	Zeiss 55mm f/1.4 Otus Sigma 50mm f/1.4 DG Art	Sony-Zeiss 55mm f/1.8 Zeiss Loxia 2/50
Portrait Prime (short telephoto)	Zeiss 85mm f/1.4 Otus Canon 85mm f/1.2L II	Zeiss 85mm f/1.4 Otus Nikon 85mm f/1.8G	Zeiss Batis 1.8/85 Sony FE 90mm f/2.8 Macro
Medium Telephoto Prime	Zeiss 135mm f/2 Apo Sonnar ZE Canon 135mm f/2L	Zeiss 135mm f/2 Apo Sonnar ZF.2 Sigma 150mm f/2.8 Macro OS	N/A
200mm Prime	Canon 200mm f/2L Canon 200mm f/2.8L II	Nikon 200mm f/2G Nikon Micro Nikkor 200mm f/4ED	N/A
300mm Prime	Canon 300mm f/2.8L IS II	Nikon 300mm f/2.8G VR Nikon 300mm f/4 PF	N/A
400mm Prime	Canon 400mm f/2.8L IS II Canon 400mm f/4 DO II	Nikon 400mm f/2.8E VR	N/A
500mm Prime	Canon 500mm f/4L IS II	Nikon 500mm f/4E VR	N/A
600mm Prime	Canon 600mm f/4L IS II	Nikon 600mm f/4E VR	N/A
800mm Prime	Canon 800mm f/5.6L IS Sigma 800mm f/5.6APO DG	Nikon 800mm f/5.6E VR Sigma 800mm f/5.6APO DG	N/A
Wide Angle Zoom	Canon 11-24mm f/4L Canon 16-35mm f/4L IS	Nikon 14-24mm f/2.8G Tamron 15-30mm f/2.8 Di VC	Sony-Zeiss 16-35 f/4
Standard Zoom	Canon 24-70mm f/2.8L II Tamron 24-70mm f/2.8 Di VC	Tamron 24-70mm f/2.8 Di VC Nikon 24-70mm f/2.8E VR	Sony-Zeiss 24-70 f/4
Telephoto Zoom	Canon 70-200mm f/2.8L IS II Canon 70-200mm f/4L IS	Nikon 70-200mm f/4G VR Nikon 70-200mm f/2.8L VR II	Sony 70-200 f/4 G
Super Telephoto Zoom	Canon 200-400mm f/4L 1.4x Ext Canon 100-400 f/4.5-5.6 II	Sigma 150-600 f/4.5-6.3 Sport Nikon 200-500 f/5.6 VR	
Long Macro	Sigma 150mm f/2.8 Macro OS	Nikon Micro Nikkor 200mm f/4	Sony 90mm f/2.8 Macro



Goldfield Mountains and Salt River (a7R Mk II, Loxia 35mm, stitched panorama)

Facebook Page

<http://www.facebook.com/pages/EJ-Peiker-Nature-Photographer/150804446733>

Newsletter Info

This is the 15th year of my quarterly Newsletter. I try to cover the wide array of digital imaging and products from mirrorless to medium format and everything in between. Throughout the years, the information contained herein has always been free and will continue to be free despite the many hours it takes to put it together and significant equipment and travel expenses. Most of the products I have tested and reviewed, I

have purchased myself; some have been made available to me for review and evaluation by loyal readers and a few have also been made available to me by the manufacturers themselves. While the newsletter is free either via eMail subscription or via accessing it on my website at <http://www.ejphoto.com/newsletter.htm>, if you find the information useful to you and you do wish to donate for my continuing efforts, you may do so via PayPal and sending the funds to ejpeiker@cox.net.



DuckShop 2016 Hooded Merganser (D7200, 150-600mm)

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Anhinga Trail, Everglades, FL (a7R Mk II, 16-35, multi-frame pano)