

Tech Tips

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by Chuck Westfall



I noticed that landscape photographers are often forced to use a gradient filter to compensate for a bright sky and relatively dark foreground. Why can't this be done digitally in camera? It seems to me that if the camera were told to look for a horizontally placed light/dark line that it could apply some exposure compensation with no need for a filter. In fact, the latest Canon 50D has some exposure compensation so perhaps this could be developed (no pun intended) to simulate a gradient filter.

To the best of my knowledge, no currently made digital camera has the ability to vary its sensitivity in different areas of an image while it is being captured, although that is a very intriguing idea. Such technology may show up in future digital cameras, but for now, there are three basic approaches to controlling dynamic range in the contrasty lighting situations you describe. The first and simplest method is to use an optical gradient filter on the lens, just as landscape photographers have done for decades. The second method involves manipulation of the image data's tone curve. This can be done to greatest effect by capturing raw image data and working on it during post-processing in your computer. Most if not all of the currently available raw conversion software applications provide various sliders or other onscreen tools to adjust highlights and shadows by modifying tone curves. Similarly, many camera manufacturers offer various in-camera settings that accommodate scenes with extended dynamic range: For instance, Canon offers both Highlight Tone Priority and Automatic Lighting Optimizer settings with cameras like the EOS 50D and the EOS 5D Mark II. Similarly, Nikon offers Active D-Lighting and Sony has Dynamic Range Optimization. These methods do as much as possible in-camera in terms of modifying the available image data from a single capture, but typically, the more the shadows are brightened, the noisier they get. The third approach, which works well in many landscape applications, is high dynamic range imaging, or HDR for short. This method involves capturing several images of the same scene at varying exposure levels, then combining the image data in a personal computer to get maximum tonal range with minimum noise. Here again, many independent software applications simplify this procedure and help create beautiful files. One of the most popular HDR programs is Photomatix Pro by HDRSoft.

<http://www.hdrsoft.com/>

Let me know if this answers your question.

What is the best way to use the Micro Focus Adjustment on the Mark III?

The question is simple enough, but the answer really depends on the lenses you're using and the way you use them. To begin with, it should be clarified that there are two types of in-camera AF microadjustment for the EOS-1Ds Mark III and EOS-1D Mark III cameras: the first adjusts the point of focus equally for all Canon EF lenses, whereas the second adjusts the point of focus for up to 20 individual lens types, at one adjustment per lens. In both cases, the point of focus can be adjusted up to +/- 20 steps in 1-step increments. Also in both cases, any adjustments you make apply only to the specific camera body in question; lenses themselves are never modified by the camera's AF microadjustment settings. The amount of focus adjustment per step is proportional to the maximum aperture of the lens, with the goal being to increase the precision of the adjustment with large aperture lenses since they have a smaller depth of focus. With all that as a preamble, here is an unofficial procedure for selecting and using an AF microadjustment setting:

1. Mount the camera to a sturdy tripod.
2. Position a reference target for the camera to focus on. The reference target should have sufficient contrast for the AF system to read, should be flat and parallel to the camera's focal plane, and should be centered with respect to the picture area.
3. Lighting should be bright and even.
4. Camera-to-subject distance should be no less than 50 times the focal length of the lens. For a 50mm lens, that would be at least 2.5 meters, or approximately 8.2 feet.
5. Set the lens for AF and the camera for One-Shot AF, and manually select the center focusing point.
6. Shoot at the maximum aperture of the lens via manual mode or aperture-priority AE, and adjust the exposure level if necessary to achieve an accurate exposure of the reference target. Use a low ISO setting to reduce noise.
7. If the lens has an image stabilizer, shut it off.
8. Use a remote switch and/or the camera's self-timer to release the shutter. Use mirror lock as well.
9. Take three sets of images at microadjustment settings of -5, 0 and +5, i.e, three consecutive images at -5, three consecutive images at 0, and three consecutive images at +5.
10. Examine the resulting images on your computer monitor at 100% pixel magnification.
11. Take additional sets of test images at different microadjustment settings if necessary until the sharpest image is achieved.
12. Register the corresponding microadjustment settings in the camera.

Here are a few additional precautions to observe:

- Do not attempt to autofocus on an angled chart, because doing so will degrade the consistency of the camera's focusing measurement. Keep in mind that the camera's AF sensor

is comprised of multiple pairs of linear pixel arrays. If you attempt to autofocus on a single line in an angled focusing chart, only a few pixels from each active pixel array will "see" the target. Ideally, the contrast in the reference target should cover the entire area of the camera's center focusing point, and the reference target should be perfectly parallel to the camera's focal plane.

- For best results, manually set the focus on the lens to infinity for every exposure before allowing the camera to autofocus the reference target.
- Expect some minor variations in focusing accuracy within each set of three test images, even though they were all taken at the same microadjustment setting. This is completely normal, and is due to the tolerances of the camera's AF system.
- Expect smaller microadjustment settings to have a greater effect with telephoto lenses, and vice versa for wide-angle lenses.
- If you are attempting to set microadjustments for a zoom lens, it is important to realize that the camera's setting may only be accurate for the focal length setting you test. The instruction book suggests testing at the longest focal length of the lens, but you may find it more efficient to choose the focal length you use most often.
- Some EOS cameras and some EF zoom lenses may require more sophisticated calibration than the in-camera AF microadjustment settings can provide. In such cases, it may be necessary to have calibrations performed at a Canon Factory Service Center.
- Last but not least, there is no "official" Canon method for setting AF microadjustments, so this procedure is unofficial. If you think you can do better, then by all means, go for it. Towards that end, be advised that some independently made tools are designed to help you set AF microadjustments accurately. One of these is the LensAlign kit, due out soon from RawWorkflow.com:

About the 1/focal [length] rule of thumb [for full-frame sensors] vs. the 1.6x crop factor: As the crop-factor sensor picks only the center part of the full image and the real focal length of the lens remains the same, how does shooting with a crop factor body differ from shooting with a full-frame and cropping the center part in post-processing? With a 50mm lens, wouldn't exposing at 1/50 s on both bodies yield the same results after cropping the biggest image? It's not as if the focal length of the lens has been directly modified, like, for instance, with an extender...

For the sake of readers who may be unfamiliar with the concept, I assume you're referring to the often repeated recommendations for minimum shutter speed to achieve blur-free hand-held photography. If so, you're correct that the degree of camera shake at the focal plane is the same for any given focal length regardless of the imaging format when all else is equal. However, you may not have taken into account the magnification factor for the final output, for example, a print. If the full-frame image is cropped to match the smaller imaging format as you

suggest, then the advantage of the additional imaging area which could have been used to reduce the magnification factor of the resulting print is lost. On the other hand, if output size is equalized and the full frame is used, then lower magnification will reduce the visibility of blur in the print. That's why the 1.6x conversion factor should be applied to the 1/focal length shutter speed rule if you're using an APS-C sensor camera and you want to play it safe. If you want to play it even safer, use a camera or lens with an image stabilization system.

I think I will be a Canon customer for the EOS 5D Mark II but I feel a little scared about 21 MP because of the file size in RAW (I always shoot in RAW). The solution proposed by Canon with the 5D Mark II seems to be sRAW when the full resolution is not necessary. But can you provide some information on sRAW? There are a lot of discussions on the Web but not so many reliable conclusions. My questions are:

- **Is the 10MP sRAW obtained from a kind of interpolation from the full 21MP? Is it true that in this way the sRAW will have a less per pixel noise than a RAW?**
- **Would it be possible with some software (like DPP) to get sRAW from a RAW file? This function would be very useful to me to keep outstanding shots in 21MP and reduce the size to 10MP for all the others. I would prefer to archive 10MP RAW than 21MP JPEG.**

The main purpose of sRAW1 and sRAW2 reduced resolution raw capture settings on the EOS 5D Mark II is to retain the image editing benefits of RAW data in terms of shadow/highlight control and white balance, etc., at a variety of resolutions and file sizes to fit the needs of professional and advanced amateur photographers. Canon is making no claims about improvements in noise levels in sRAW1 or sRAW2 compared to RAW, and the company has not published the methods it uses to produce lower resolutions. According to my tests in DPP, there is no noticeable difference in noise levels for any of these data recording modes. Since there is no significant difference in terms of noise, the main advantage of sRAW1 and sRAW2 is more images per CF card for shooting conditions where the reduced resolution is adequate for the job at hand. Nominal file sizes for RAW, sRAW1 and sRAW2 on the EOS 5D Mark II are 25.8MB, 14MB and 10MB respectively. Thanks for the feature suggestion on producing sRAW files from RAW files in DPP. There have been several requests for this functionality, which have been forwarded to Canon Inc. for consideration.

Can you perhaps help me with a 'how-to' for an EOS 400D/Digital Rebel Xti? I am trying to hook a non-Canon flash to the hot shoe on the 400D. If the camera 'sees' enough light through the lens to believe it is OK to allow the shutter to fire, a picture is taken and the flash fires. If there is too little light, as would be the case where flash would be needed, the metering mode symbol flashes in the display, and the shutter won't fire. I have set the camera to manual mode, and can alter the aperture and speed satisfactorily. What do I have to do to the camera to get it to fire the flash? I might add that I use the flash with my two A-1s and one T90, both of which do have TTL capability, but which also work quite well with this gun in manual mode from their hot shoe connections.

The Canon A-1 did not have TTL flash metering, but that's beside the point. If it is so dark that the EOS 400D's AF sensor can't read the subject, you will need to set the lens for manual focusing (and focus the image yourself) in order to release the shutter and fire your non-

dedicated flash. Canon's EX-series Speedlites circumvent this problem by incorporating an AF Assist beam that illuminates the subject for autofocusing prior to shutter release.

Back in the film days, film was rated in mired values so you could get an idea of which filters, (e.g., 81A or 81B), to use to compensate for color shifts. Do digital sensors have an equivalent?

Unlike color films, the image sensors of digital cameras are not rated in terms of specific color temperature settings or mired values. Instead, most modern digital cameras have various white balance settings including presets that correspond to daylight, tungsten, and fluorescent light sources among others. Additionally, advanced digital cameras offer manual color temperature settings and even custom white balance functions that let you match the camera's color reproduction to the specific lighting conditions at hand, using a gray card or white sheet of paper as a neutral reference target. Generally speaking, you can use the camera's LCD monitor to get a reasonably good idea of the color accuracy for the white balance setting you've selected, although it's best to use a calibrated photo-quality computer monitor for precise measurements and evaluations.

I've been combing the web for insights as to the best way to shoot flash with a Canon EOS 5D and 30D. We use them for weddings, and are having inconsistent results. Are there optimum settings to use for best results? I've adjusted custom function for evaluative and average flash metering, adjusted camera metering modes, etc., but seem to always be changing exposure compensation. As you can imagine, shooting a wedding is a fast-paced job, and there's not a lot of opportunities to make constant adjustments, or re-shoot. Any help you could provide me with would be appreciated.

With your experience, I'm sure you understand how difficult it can be to get consistently accurate flash exposures with wedding photography. The typical subject matter is either all white, as in the bride's dress, or all black as in the groom's tuxedo. This is problematic for flash metering systems because they are designed to expose for mid-tones, and there just aren't many of those in the typical wedding photo.

The E-TTL II flash metering system used in current and recent EOS Digital SLRs including the 5D and 30D works very well at its default settings with most subjects, but it has overrides that are intended to help it overcome unusually bright or dark subject matter. One of the overrides that I've found most helpful for wedding photography on these particular models is Custom Function 14-1. This C.Fn changes the flash metering pattern from Evaluative to Average. The reason I like it is that Averaged flash metering looks at the entire scene and reduces the possibility that any single element will be overemphasized.

Another technique that I find helpful for flash photography at weddings is bounce flash rather than direct illumination, because it softens the light for a more pleasing effect. There are plenty of commercially made diffusers around, but my favorite is the Ultimate Bounce Card by Peter Gregg. It's easy to use, and the quality of the illumination is outstanding, in my opinion. For more information, visit Peter's web site at:

<http://www.abetterbouncecard.com>

If you're going to do a lot of bounce flash photography at a wedding and you're using either the Speedlite 580EX or 580EX II, I would strongly suggest using an external battery pack such as the Compact Battery Pack CP-E4. Not only will this accessory speed up recycling times and increase the number of flashes per set of batteries, it can also minimize the possibility of overheating the flash unit. In order to make the most of that feature, set Custom Function 12 on the flash itself. This C.Fn reduces the drain on the batteries in the flash itself by recycling from the external pack only.

The decision on ambient metering during dedicated flash photography should be based on the shooting conditions. There is no "one size fits all" answer. With a heavily backlit subject in a fill-flash situation, either evaluative or centerweighted average metering would be good choices. Spot metering might be problematic in a heavily backlit situation, since you'd run the risk of blowing out the background. Indoors or at night in an "all flash" situation where the ambient light is making no significant contribution to the overall exposure, choice of ambient metering pattern will make no difference. The good news is, there's usually have enough time to take a test shot or two in a given lighting condition so you can evaluate your results quickly on the camera's LCD screen and make an adjustment if necessary.

Last but not least, you might want to consider shooting your wedding photography in RAW mode on the camera. This setting requires post-processing in your computer, but the advantage is that you can adjust your highlight and shadow detail to a far greater degree than is possible with in-camera JPEGs. Most of the professional wedding photographers I know use a RAW workflow for this reason, and it's also helpful for tweaking white balance for better color accuracy when desired.

These are just brief comments on a subject that could be explored in much greater depth, but I think your results will improve if you try some of these techniques. Hope this helps!

The standard zoom lens for the new EOS 5D Mark II is the EF24-105mm f/4L IS USM lens. Are there EF lenses that work better with the camera than others? Also, with the new sensor in this camera, are f/2.8 lenses really made obsolete and f/4 truly sufficient for low-light photography?

The EF24-105mm f/4L IS USM is probably the most flexible general-purpose zoom lens for the EOS 5D Mark II camera. It would be a good choice as a "walk around" lens that you can depend on for a wide variety of typical photos. However, before purchasing any new lens, you should take the time to consider your personal priorities. What are your main interests in photography? Landscapes? Architecture? Portraiture? Sports? Birds? Macro? Weddings? Low Light without flash? etc. Answers to these questions will go a long way towards guiding you to the lenses you should consider. With more than 50 EF lenses to choose from, there's bound to be a few of them that will fit your needs and budget. The high ISO capabilities of the EOS 5D Mark II really make low light photography without flash a lot easier even with an f/4 lens, but faster lenses will give you more control over depth of field while at the same time extending the range of lighting conditions you can work in. If you're interested in trying a large aperture lens without investing a lot of money, consider the EF50mm f/1.8 II.

I wonder if you can give us the maximum exposure time for each camera in the current line-up. I want to do star-trails and other long exposure pictures, which require 3-5 hour long exposures. Are there any settings (such as noise reduction) which will shorten the possible exposure time because of lengthy post-shot processing? What happens to a photo that runs out of juice half-way through - will the camera save whatever it's got in it's memory, or will the shot be lost?

Realistically, maximum bulb exposure time for an EOS Digital SLR is going to depend on the type of power supply and to some extent the ambient temperature conditions. By far the longest exposures are enabled when using the optional DC Couplers and AC Adapter Kits, since these accessories eliminate concerns about battery life. If you're doing astrophotography from your back yard or any other location where AC power is accessible, this is probably the most feasible solution. When AC power is not accessible, the next best solution is to use an optional battery grip and load it with two lithium-ion rechargeable battery packs. The battery grips and battery packs will vary according to the camera model involved, but in moderate temperatures it would be reasonable to expect no more than approximately 4 to 6 hours of battery life for time exposures with a two battery power supply. In situations where only one battery pack is available, the total bulb exposure time in moderate temperatures will be somewhere in the range of 2 to 3 hours. Cooler temperatures down to the cameras' minimum rated operational range of 32 degrees Fahrenheit will reduce battery life somewhat. In answer to your second question, any image data in the camera's buffer memory will be lost if the camera loses power before the file is written to the memory card. Since long exposure noise reduction in the camera can last as long as the actual exposure, you'll need to factor that into your decision on setting the length of time exposures.

Will the new Canon EOS 5D Mark II have interchangeable viewfinder screens? I am interested in a split-image rangefinder type as I hope to use the new Zeiss manual focus lenses on this camera if I purchase it.

Canon offers 3 interchangeable focusing screens for the EOS 5D Mark II, but none of them has a split-image rangefinder manual focusing aid. Frankly, I don't expect this option to be offered for the 5D Mark II because of the possibility of exposure errors in certain metering patterns that could be caused by the different brightness levels passed through to the exposure metering system by a split-image rangefinder. The best options Canon offers for critical manual focusing with the EOS 5D Mark II are Live View, Angle Finder C, and Super Precision Matte Focusing Screen Eg-S:

1. Live View features a choice between full screen viewing and magnification settings of 5X and 10X for critical focusing. The focusing frame can be moved anywhere in the picture area depending on the portion you wish to magnify.
2. Angle Finder C is an optional accessory that slips over the optical viewfinder's eyepiece. It features a choice between full screen viewing and a magnification setting of 2.5X for the center of the picture area.
3. Super Precision Matte Focusing Screen Eg-S does not have a split-image focusing aid, but it does display a shallower depth of field with fast lenses than the 5D Mark II's Eg-A standard focusing screen. This makes manual focusing easier with f/2.8 or faster lenses, especially when used in combination with Angle Finder C's high magnification setting.

I use Wireless File Transmitter WFT-E2A with two Mark III cameras, an EOS-1D Mark III and an EOS-1Ds Mark III. On two occasions, the camera lost the wireless PTP communication with my computer and stopped working with the buffer full of untransferred images (total camera freeze). The images in the buffer were not written to the camera's memory card and the only way to bring the camera back to life was removing and resetting the main battery. In both situations I immediately noticed that the tightening screw of the module got loose probably due to shutter/mirror vibrations during normal camera use. After tightening the connection, the problem never appeared again. Do you think that a loose physical connection between WFT-E2A and a Mark III camera can cause such camera behavior and prevent saving the images to the card as well? I also noticed the WFT-E2A gets slightly warm during normal use and the camera battery in the EOS-1Ds mark III lasts for some 800-900 shots (transmitting small JPG files only). Is it normal for wireless PTP communication to require that much power consumption?

Have you updated the firmware on your Wireless Transmitter WFT-E2A? For best results, it's important to use firmware version 1.0.1 as described here:

<http://web.canon.jp/imaging/wft/wfte2-firmware-e.html>

This firmware update is intended to save images to the memory card in the camera if wireless transmission is interrupted due to an unstable wireless connection. Also, it is important to use the lock lever on the WFT-E2A together with the screw-in connection at the base of the unit to ensure a tight fit between the WFT-E2A and the camera. Once these steps have been taken, normal use of the camera should not loosen the connection. Regarding shooting capacity, the WFT-E2A manual states that a fully charged battery pack in the camera can transmit up to 1,100 images through the WFT-E2A (presumably via Ethernet), but "fewer images can be captured when transferring over wireless LAN." Therefore, your report of approximately 800 to 900 images transferred on a single battery charge is normal. And it also normal for the WFT-E2A to warm up slightly during extended usage.

Thank you very much for your response. My WFT-E2A transmitter came already with firmware version 1.0.1 preinstalled. In my case it was not regular loss of wireless connection (as the firmware update would indeed help here) but it was rather sudden physical disconnection of the entire module during its work in progress, which probably resulted in some kind of malfunction in electronics causing the pictures in the buffer to be lost. Good news is that for the last 6 months now the problem has never appeared again since I'm now much more careful about the connection screw during use.

On a recent trip, I used two different cameras depending upon the circumstances – one, a Canon PowerShot A630 compact digital camera and the other, my EOS-1D Mark II digital SLR. Almost without exception the A630 took tack sharp and seemingly perfectly exposed images. All with a *snap* to them. In order for me to get the same quality or look, I must do post processing in Adobe Photoshop CS2 using levels and un-sharp mask adjustments. The 1D Mark II images look flat (flash would not be a help in these cases) and don't represent what I saw when I made the image. The only exception may be in sunlight with the 1D Mark II; those seem to be OK. Is there an adjustment or custom function I am missing?

The results you achieved are the results you should expect when using these cameras at their default image quality settings. I've written a detailed article on this topic in a PDF document about the EOS-1D Mark II camera, which is available online here:

http://www.usa.canon.com/content/Handling/EOS_Digital.pdf

Feel free to read the whole thing, but the section that's most relevant to your inquiry begins on page 25 and continues on page 26. Please pay attention particularly to the diagram on page 26 that shows the default settings of the

EOS-1D Mark II in terms of sharpening, contrast, saturation and color tone versus other cameras including compact digital models like the PowerShot A630.

I shoot concerts and magazine work as well as landscape photography. Now that Canon has announced the EOS 5D Mark II, what would be the logic of keeping my EOS-1Ds Mark III besides faster frame rate and superior weather sealing? How different is the shutter lag? Is there anything else to consider?

With its superior low noise performance and Full HD movie recording capability, the EOS 5D Mark II is a remarkable camera that raises the bar for image quality in the EOS system. However, the EOS-1Ds Mark III still has the edge over the 5D Mark II in the following areas:

- More durable camera body with better weather resistance. (5D Mark II has better weather sealing than 5D or 50D, but not as good as the Mark III SLRs.)
- 300,000 cycle shutter durability vs. 150,000
- Dual memory card slots
- 100% viewfinder at .76x magnification vs. 98% viewfinder at .71x magnification
- Longer lasting battery (1700 shots per charge vs. 850)
- 45-point AF sensor with 19 high-precision cross-type AF points vs. 15-point AF sensor with 1 high-precision cross-type AF point
- 15 interchangeable focusing screens vs. 3
- 5 fps vs. 3.9 fps
- X-sync 1/250 vs. 1/200
- Shutter lag and blackout between frames is 55 ms/87 ms for 1Ds Mark III vs. 73 ms/145 ms for 5D Mark II

There are other feature differences in favor of the 1Ds Mark III, but these are some of the biggies. They're basically two different kinds of cameras that are targeted towards different market segments.

I am interested in your opinion on the subject of white balance being incorporated into a flash. I'm thinking the simplest way to do this would be to have a couple of colored flip-out panels built in (much like the 14mm diffuser). Otherwise, do you think it's possible to change the temperature (Kelvin) output of the flash internally to match the white balance of the camera?

Most shoe-mount flash units are capable of controlling automatic flash exposure very precisely by varying the duration of the flash burst. This method has the disadvantage that color temperature levels vary slightly according to the duration. Battery power levels also have an effect, with higher power levels resulting in slightly cooler color temperatures than lower power levels. For these reasons

among others, installing colored gels or panels over a flash head can only control color temperature to a limited extent. Canon recognized this issue several years ago and resolved it by adding a feature called automatic color temperature compensation to its EX-series Speedlites starting with the 580EX. With this feature, a circuit in the flash reads the battery power level and the flash duration for every shot, and then applies a color temperature compensation factor to the white balance data in the resulting image files. This has the effect of equalizing the color temperature for all flash photos taken with the 580EX or newer Canon Speedlites with EOS digital SLRs.

I have read that when used as a focus-assist device, Speedlite Transmitter ST-E2 is compatible with lenses of focal lengths 28mm and longer. Is this true for lenses on 1.6x factor camera bodies, such as my EOS 40D? Or can I use lenses with focal lengths that are equivalent to 28mm and longer? I was hoping to use the ST-E2 as a focus-assist device when shooting with my 24mm f/1.4L.

Speedlite Transmitter ST-E2 is effective as an AF Assist beam with any Canon lens regardless of focal length as long as the camera's central focusing point is manually selected. But its effectiveness with peripheral focusing points is limited to lenses with focal lengths of 28mm and longer, regardless of the size of the camera's image sensor.

I own an EF70-200/2.8L and an EF100-400L lens, both members of the "white family" of Canon L-series lenses. When looking at the Olympics last month, the white lenses stood out from the crowds of photographers. But is the white color more than just a marketing gimmick? On <http://web.canon.jp/imaging/l-lens/index.html>, Canon says there are technical reasons for "white," and with some imagination we all understand about the heat problems with electronics and lubricating fluids. But does it have an optical advantage too? Are there test results out there that support this?

The first "white" Canon lens was the FD600mm f/4.5 S.S.C., which was announced in July of 1976. At that time, Canon Inc. described the lens barrel color as "Silver Grey." They said that the new finish was selected due to the suggestions of professional photographers who felt that the lighter color would absorb less heat than a black lens barrel, thus reducing the likelihood of condensation in humid environments. Over time, the color of subsequent "white" lenses became brighter and slightly warmer in tint than the FD600mm, but the functionality has remained the same.

I have owned / extensively used a number of Canon DSLRs, including the 1D, 1D2, Rebel, Rebel XT, Rebel XTi, and 20D. I continue to notice over the years that when looking at screen saver photos, shots taken with my 1D are very often noticeably sharper than any of the other cameras. The degree of

this phenomenon continues to surprise me. You have previously advised that the 1D's AA filter was less aggressive than newer models. My understanding is that increasing the sharpness setting, when shooting JPEGs would, to some degree, counter the newer, more aggressive AA filters. My question is whether increasing sharpness to maximum on newer models would theoretically achieve the equivalent level of AA filtering on the 1D, and whether such a degree of sharpening would be expected to have a significant negative impact on image quality in other respects, such as moire, noise, etc.?

It's difficult to make a valid comparison between the EOS-1D and other EOS Digital SLRs, if for no other reason than the fact that the original 1D at 4 megapixels had the lowest resolution of any EOS Digital except for the 3.1MP EOS D30 back in 2000. In order to make any comparison as fair as possible for all the cameras involved, we'd have to settle on a fixed output size, such as a 13 x 19 inch print, so that we're not throwing away the higher resolution of the newer cameras before we compare. Under those conditions, I'd say that any current EOS Digital model would outperform the original 1D in terms of overall image quality including sharpness and noise, assuming equal in-camera sharpness and ISO settings, etc. You wouldn't even have to change the newer camera's default sharpness settings to see the improvements, although raising the sharpness settings on a newer camera would increase its advantage over the original 1D. The higher the resolution of the newer camera, the greater its overall sharpness would be on a 13 x 19 inch print, all else being equal. The same logic would even extend to a screensaver image, as long as the image data is downsampled properly. Note that I am not saying the original EOS-1D was a slouch by any means. I am saying, though, that current EOS cameras are much better in terms of image quality including sharpness and noise levels.

When an EOS camera selects multiple focus points automatically, does it average the distance of those points and focus on the averaged distance?

Most definitely not. When multiple focusing points are illuminated in the combination of One-Shot AF with automatic focusing point selection, it means that all of them are within the same depth of focus as each other. In such cases, the camera usually selects the closest focusing point with reliable data. In the case of AI Servo AF and automatic focusing point selection, AF frames are not illuminated while the subject is being tracked. In cases where the subject is large enough that multiple focusing points are within the same depth of focus, a similar rule for focusing point selection is applied. In both cases, data from only one focusing point is actually selected and used by the camera.

My question is related to the EOS-1Ds Mark III and its standard focusing screen Ec-C IV. I shoot mostly landscape and city photos and I am interested in the Ec-D grid focusing screen. This focusing screen requires a change to the custom function. (C.Fn IV - 11 must be set to option 1.)

What is behind this change? Are there any drawbacks? I am not talking about the grid on the Ec-D vs. the ellipse on the Ec-C IV here, but are there any differences in AF and/or metering performance?

The reason why individual focusing screens have different custom function settings is that their light transmission efficiency varies according to the aperture of the lens in use. Some screens like the Ec-C IV are slightly brighter with moderate aperture lenses than other screens like the Ec-D. This affects the accuracy of exposure meter readings, since the metering sensor is positioned above the camera's pentaprism, and it reads the light after it has passed through the focusing screen. Selecting the correct custom function allows the camera to modify the exposure meter reading according to the specific light transmission characteristics of the focusing screen in use. The camera's AF system is positioned in the base of the mirror box, so its performance is unaffected by the user's choice of focusing screens.

I currently have an EOS 20D DSLR and recently purchased a "refurbished by Canon" EF400mm f/5.6L USM lens. At first I thought it was a soft copy, but after inspecting a few images and doing some testing, I discovered it was a front focus issue (about 1.5 inches at 15 feet and 3 inches at 30 feet). My question, is this within the range correctable by a micro focus adjustment? If so, is it likely that any Canon crop factor DSLR will have this feature any time in the near future, or should I go ahead and have the lens calibrated at this time?

A focus adjustment of 1.5 inches at a subject distance of 15 feet is definitely within the range that could be handled with AF Microadjustment. The EOS 50D that was announced on Aug. 26, 2008 is the first Canon SLR below the 1D series to offer an AF Microadjustment feature. This new camera is scheduled to be available in early October.

Why does Canon no longer use Cyan/Yellow/Magenta color filter arrays in its digital cameras? As far as I know the Canon PowerShot S10 among others used such a filter. A CYM filter should yield better low-light sensitivity. Am I wrong?

It is true that CYGM filters of the type used on the PowerShot S10 back in 1999 are more efficient than RGB filters in terms of light transmission. The relatively low sensitivity of the CCD that was used for the S10 camera was one of the main reasons why Canon used CYGM on that camera and its predecessors, like the A5 and A50. Another reason was the relatively slow image processors in use at the time. However, image sensors and image processors have come a very long way in terms of technological advancement since then. For those reasons, together with the fact that RGB color filters provide better overall color reproduction accuracy than CYGM, Canon switched to RGB filtration for all of its digital cameras as far back as the year 2001.

Quick question: I have an EOS-1D Mark II and have purchased the Sekonic C-500 color temperature meter that recently came out. In the camera manual, it states the mired values for the Amber/Blue adjustment, and I am able to figure that out. But it does not mention any details on the values for the Green/Magenta other than 1-9. Do you know what CC filter numbers would correspond to the 1-9 steps of adjustment on the Green/Magenta settings? Does Canon have any in-depth info on this that would give equivalent CC filter numbers?

There's no official information from Canon on this topic. My suggestion would be to perform your own tests to determine this data. You could do that by photographing a neutral test target that's been custom white balanced in the camera, then taking a series of JPEG images at each of the Green and Magenta WB Shift settings. The results could then be measured in an image editing program and compared to the results from images shot with actual CC filters.

I am curious as to why the manual AF point selection process was changed so dramatically on the Mark III cameras. I would love to be able to select all 45 AF points like I can with the Mark II cameras. I can understand that perhaps there were complaints about too many points, but I liked the options to limit the number of points 11 or 9 while retaining the option of selecting from all 45 points when desired. Also with the EOS-1V camera, for film advance you have a high- and low-speed continuous and an ultra-high speed. This was the coolest feature. Perhaps there is a way to have three motor drive speeds on the Mark III cameras easily? For example: I like how I can change the frame rate for L/H continuous, but I find myself needing 3-4 fps for portraits and the like, 6-7 fps for action and 8+ for fast action. Otherwise I am really happy with Canon products.

The designers of the Mark III cameras haven't answered your first question directly, but they have made it clear that they were trying to improve the functionality of the cameras with the new AF sensor. Setting aside the discussions on focusing accuracy, one obvious difference between new and old is the presence of 19 high-precision cross-type AF points spread throughout the AF Area Ellipse (versus seven such points in the central area for the Mark I and Mark II cameras). This change was intended to improve the performance of the peripheral AF points not only in terms of precision with high-speed lenses but also in terms of subject recognition due to the cross-type design.

By limiting manual selection to those 19 points instead of all 45, they accomplished the objective of speeding up manual focusing point selection, especially after the firmware update that made it possible to use the multicontroller for that purpose. But I suspect (personal opinion) that they were also thinking about the difference in performance between the high-precision cross-type AF points and the single-axis normal precision "assist" AF points. They may have wanted to ensure that any manually selected focusing point

would be consistent in terms of performance with any other manually selected focusing point. In any case, we have received several requests to restore the full selection of all 45 focusing points from several users, and your request will be added to the queue.

The Mark III cameras already support multiple framing rates to some extent through Custom Function III-16, which allows users to specify alternate framing rates for both high-speed and low-speed continuous. You can move that C.Fn to the "My Menu" tab for quick access, and then turn the function off or on relatively quickly to get the drive speed you prefer. So for instance, you could set 1 or 2 fps in low-speed continuous, and 6 or 7 fps in high-speed, which could be alternated with the camera's default settings of 3 fps and 10 fps respectively.

A friend of mine took a "bee on flower" macro with a Canon ring flash using a Canon 100mm macro at f/22 on a 40D set to ISO 200 in M mode with 1/200 second dialed-in. For all the world it looks like there's motion blur in some of the bee's legs. I can only surmise his flash was in High-Speed Sync mode, which caused the light to be on the whole of the 1/200 second shutter open time. I'm not near him, so I can't look over his flash settings nor do I own a Canon Ring Flash. Anyone familiar with how one determines/enables/disables High-Speed Sync mode on the Canon Ring Flash?

The controls for high-speed sync on the Macro Ring Lite MR-14EX are on the back of the power supply's control panel. However, high-speed sync is not the best solution for this problem. High-speed sync works by firing the flash at an extremely rapid rate for the entire duration of the exposure. It effectively turns the flash into a constant light source when used at shutter speeds higher than maximum X-sync speed, which is 1/250 for the EOS 40D and the 1D series digital SLRs. It has to be that way in order to provide even illumination across the frame as the moving slit of the focal plane shutter executes the exposure. That's also why the exposure level drops as the shutter speed increases, because you are in effect reducing the amount of time that the light is reaching the sensor. You can see a diagram that shows the difference between standard flash exposure and high-speed sync in our Flash Work Web site here:

<http://web.canon.jp/imaging/flashwork/ettl2/high/index.html>

Bottom line, the 'high speed' in high-speed sync refers to shutter speed, not flash duration. One additional item of information may be helpful: Even in normal flash mode (i.e., not high-speed sync), flash duration at full power with an MR-14EX can get as long as 1/750 sec. That might not be fast enough to freeze the motion of a bee's wing. One way to shorten the flash duration is to raise the camera's ISO speed setting. Another method for doing that is to open the aperture. Making the same shot at f/16 and ISO 400 instead of f/22 and ISO 200 would have cut

the flash duration significantly with very little difference in noise levels or depth of field. Every little bit helps!

Thank you, Chuck. It always helps to know how things work to get the most out of using them. By the way, my friend made changes per your suggestion and retried his bee shots. The results were much better; the bees were all sharp and the 40D didn't deliver any distracting noise to speak of. I'm curious: Is flash duration information for various Canon Flashes available anywhere?

Canon does not publish detailed specifications on flash duration for its Speedlites, but the information I quoted for full-power flash duration on the MR-14EX is also applicable, generally speaking, for the MT-24EX and the 540EZ, 550EX, 580EX and 580EX II flash units. There are several reasons why full-power flash duration is designed to be approximately 1/750 second. Here are the top two:

1. Maximum X-sync shutter speed on high-end EOS SLRs like the 1D/1Ds series and the 40D/30D/20D cameras is either 1/250 or 1/300 second depending on the camera model, but the actual amount of time that the shutter blades are completely retracted during that time is only about 1/750 second. Makes sense if you think about it; it takes a certain amount of time for the first shutter curtain to move out of the way so that the entire image sensor is fully exposed, and it takes an equal amount of time for the second shutter curtain to cover the sensor and end the exposure. Keep in mind that except during high-speed sync mode, the flash can only fire when the shutter is completely open.
2. For any given Speedlite, the longer the flash duration, the greater the light output. Considering the relatively low-capacity flashtubes and capacitors used in these Speedlites, a 1/750 second flash duration provides the greatest possible output at all shutter speeds up to maximum X-sync. That's usually a good thing, except in the case of a very rapidly moving subject like the wings of a hummingbird or a bee.

The MR-14EX and MT-24EX each have two flashtubes, whereas the 540/550/580 series has only one. If both flashtubes are fired at full power simultaneously, their individual durations will be half that of the single tube Speedlites. However, it is also possible to fire only one flashtube at a time with the Macro Speedlites, which will bring the full power duration back to approximately 1/750 second. I could go on, but hopefully this information provides some additional useful perspective on the topic.

Could you please clarify the operation of Mode 2 (panning) IS on the Canon EF70-200mm f/2.8L IS USM lens? Does it work correctly only when panning across the long axis of the frame (horizontally) or is it smart enough to

detect a smooth pan in any orientation/direction and correct for vibrations perpendicular to that detected axis (even diagonally, for instance)?

Every Canon Image Stabilizer lens has two "gyro sensors" oriented at right angles to each other. If the IS lens has a Mode 2 setting, it compensates for panning by shutting off image stabilization in the direction that is parallel to the panning movement. With this system, it's entirely possible to compensate effectively for panning in any direction, even diagonally. It also makes no difference whether the camera is held horizontally, vertically, or diagonally with respect to the horizon line of the image.

I own an EOS 30D and an EOS 40D. When I first got the 30D, the brightness of the display in the viewfinder appeared just fine. Over time it has gotten very dim to the point that it is only visible on a sunny day if I cover the viewfinder area with my other hand. The difference in the 40D and the 30D viewfinder brightness is like night and day. I read in the forums that the display being dim on the 30D is a common problem. Is there anything I can do about it? I love the camera but it's to the point where I may want to sell it because of this one problem.

It is difficult at best to diagnose equipment problems without seeing the equipment first-hand, but based on your description, I wonder if there might be a problem with the LED backlighting system behind your EOS 30D's LCD screen. There's no reason why the screen should become dimmer over time. That being said, it is often difficult to see images or menus on an SLR's LCD screen in bright sunlight, even when the equipment is functioning correctly. And there is no question that the EOS 40D's LCD screen is brighter than the EOS 30D's, due to the fact that the 40D with its larger 3-inch display uses more LEDs in its backlight mechanism. If there is a problem with the backlight in your EOS 30D camera, you'll need to have it repaired by a Canon Factory Service Center. But before you send in your camera, I would recommend that you do a side-by-side comparison in indoor lighting with another EOS 30D or even 40D body. Be sure the camera's battery pack is fully charged, and check the LCD brightness adjustment settings on the camera's menu screen. If you're convinced that there's a problem after that, then go ahead and send in the camera. The Factory Service Center will be able to replace the backlight if necessary in order to bring the camera back to its design specifications.

I am trying to use an 8GB SD card in the #2 card slot of an EOS-1D Mark II and when I try to format the card I get the message 'Cannot format or change card #2.' Is this because I am using too large of a card in the second slot or is there another reason?

Check to see what version of firmware is installed on your 1D Mark II. It has to be 1.2.6 in order to format SDHC memory cards in the camera, i.e., SD cards with capacities higher than 2GB. If you need 1.2.6, you can download it here:

http://web.canon.jp/imaging/eos1dm2/eos1dmk2_firmware-e.html

I have a PowerShot G9 and it does a remarkable job for its size, so refreshing to take on family trips etc. The one thing that is really cool for me is the live histogram. When shooting in M, you can adjust the setting and watch the histogram move back and forth to get it just right; wish my EOS-1D Mark III had that.

Live histograms are available with the EOS-1Ds Mark III, EOS-1D Mark III, EOS 40D EOS Rebel XSi and EOS Rebel XS when those cameras are set to their Live View mode. It shows up on the LCD screen just like it does on the G9, only bigger, and with an option to display either RGB or Luminance. I can't imagine many photographers preferring Live View at its current feature level for the bulk of their work, but it's nice to have it available when it can be useful, such as this situation.

After learning of the EOS-1Ds Mark III's feature for setting the aspect ratio of captured images, I tried it on my camera, thinking it would help show what an 8x10 crop would look like on my LCD screen. After downloading the card and processing in DPP, I find that the images are cropped in that aspect ratio which I really didn't want. Is there a way to turn the images back to 2x3 ratio? They show the full picture with the lines in it but after processing they are 4x5s.

Here's how to clear the crop marks in DPP:

1. In DPP's Main Window (not the Edit Image Window), select the image(s) you want to work on.
2. From the Tools menu, start the Trimming Tool.
3. Locate "Clear" in the menu to the right of each image and click on it.

That will get rid of the crop marks and allow you to print the full frame, or allow you to select any of the other cropping alternatives.

I have some question regarding the handling of the TS-E45mm f/2.8 lens. Should I always take care to lock down the tilt and shift pressure knobs? Would the internal gears get damaged if I keep them loose all the time? I noticed that when the pressure is off, any moderate force on the camera body will cause the tilting lens element to snap around. Would it also be safe to manipulate the tilt and shift directly by hand instead of turning the knobs?

Leaving the tilt and shift adjustments unlocked won't damage a TS-E lens directly, but I would suggest tightening them up at least partially when the lens is

not in use. This will prevent the mechanisms from unnecessary wear and tear that might be caused by inadvertent movement. It's no problem to adjust the movements directly by hand as long as the camera and lens are mounted on a sturdy tripod and the tilt and shift mechanisms are completely unlocked, but you may find that the shift movement in particular is easier to control precisely with the adjustment knob. Once you've made an adjustment, it's good practice to lock the mechanism to prevent further movement.

Is it possible to rename the file prefix for Canon EOS Digital SLRs (30D, 40D, 1Ds Mark II)? I use at least two bodies on assignment. I like to send selected photos into a work file at the end of the assignment. I sometimes find that I want to send images from different bodies with the same name to a single work file. Of course, the second image can't be saved. I'd rather rename the prefix in the camera than rely on a renaming utility on my computer.

In-camera file prefix renaming is available in the EOS-1Ds Mark III and EOS-1D Mark III as well as the EOS-1D Mark II N, but I do not anticipate that it will be retrofitted to older or lower-category models like the 1Ds Mark II, 40D or 30D. For those cameras, the best available option is file renaming during or after download. EOS Utility software supports customized renaming during downloads, including the ability to use the camera's serial number as an identifier when desired. Selecting the file renaming options is essentially a one-time procedure, and once it's been done you can concentrate on shooting, knowing that your files will be renamed automatically as soon as they enter your computer system.

Is there a list somewhere that mentions whether a Canon IS lens has tripod-sensing capabilities? It is my understanding that a lens without that ability would suffer damage from being mounted on a tripod with IS engaged. I own several different IS lenses and plan to buy more, so it would be nice to have this information at hand.

First things first: It is impossible to damage any Canon Image Stabilizer lens simply by using it on a tripod. That's essentially a non-issue. The only thing you need to avoid is removing the lens from the camera while the IS mechanism is actually running. It's rare for this to occur, because the IS mechanism typically shuts down within a second or so after you remove your finger from the shutter release. You'd have to be pretty quick to remove the lens while the IS mechanism is running unless you were half-pressing the shutter button intentionally during removal. If you want to preclude the possibility altogether, just shut off the camera or the IS mode switch on the lens before removing it.

Next, virtually all Canon Image Stabilizer lenses except the now-discontinued original 1995 EF75-300mm IS model have some degree of tripod-sensing. In most cases, what that means is that when the lens senses that it's completely

steady, it effectively prevents the IS mechanism from moving. With typical IS lenses like the EF70-200mm f/4L IS USM or EF24-105mm f/4L IS USM, that's about as far as it goes. In other words, the IS mechanism doesn't move when the lens is mounted on a tripod, but by the same token, it doesn't compensate for other sources of vibration such as the slap of the camera's reflex mirror prior to the beginning of an exposure. As I mentioned in an earlier edition of *Tech Tips*, I recommend shutting off the IS mechanism when using these lenses on a tripod in order to save battery power, and also to lock and center the IS mechanism.

However, there is a group of high-end Canon lenses that actually does compensate for mirror slap during tripod use. This list currently includes the EF200mm f/2L IS USM, EF300mm f/2.8L IS USM, EF400mm f/2.8L IS USM, EF400mm f/4 DO IS USM, EF500mm f/4L IS USM, EF600mm f/4L IS USM, and EF800mm f/5.6L IS USM. With these lenses, it's usually a good idea to leave IS on for long exposures on a tripod unless you plan on locking the mirror prior to exposure.

Last week, I purchased the WFT-E2A wireless transmitter for my EOS-1D Mark III camera. It works very well as a wireless transmitter (FTP, PTP and HTTP). However, whenever I try to connect my external hard drive to it, the WFT-E2A refuses to connect to the hard drive. I keep getting the message "Incompatible USB device" after the camera and the drive attempt to "talk" to each other (both transmitter and drive LED lights blink away) for a few seconds. The external device I'm trying to connect is the Western Digital 320GB Passport Essential. I know there's nothing wrong with the hard drive because it works fine with my Apple computers and Dell laptop. I e-mailed Canon Tech Support about this problem yesterday but I'm not sure their diagnosis of the problem is correct. They said that the transmitter may not be providing enough power to the external drive. The reason I question this is because the drive spins up just fine and the drive LED light blinks while the camera is trying to connect with the drive. It is only after the connection attempt fails that the drive turns off again. According to the WFT-E2A manual, I should be able to connect a drive up to 1 TB in size to the transmitter. I was wondering, do you have any idea why the WFT-E2A is not connecting to the hard drive? I've tried partitioning and formatting the drive a smaller 30 GB drive (not that this would help if the problem were truly power related) thinking that maybe 320GB is too large, but that was to no avail. Whatever assistance you can provide to help me resolve this problem and get my hard drive talking to the WFT-E2A will be greatly appreciated.

Your external HDD may require its own independent power source to work properly with the WFT-E2A. This would definitely be true if the disc diameter is larger than 1.8 inches.

I've been a very happy 40D and (among other lenses) EF-S55-250 IS lens owner for quite some time and have gotten some great pics. Canon's

engineers did a nice balancing job with this lens and reasonable tradeoffs between IQ, weight, size, cost, etc. But one thing that's occasionally a bit annoying about the 55-250 lens is that if I'm shooting distant animals/sports/etc. and it loses focus, it takes a long time to reacquire as it ratchets focus all the way in (minimum focus distance on this lens is great, BTW), and then back out. I figured that was the price I paid for non-L glass and non-USM. But I recently tried a 100-400L lens and saw the similar behavior. However, this lens has a Focus Limiter which limits how close focus will be attempted. This makes all the difference in the world for long-distance shooting. So ... I'm curious why Canon didn't put a focus limiter on the 55-250? Sure, this is a consumer lens for budget-limited people such as myself, but I have to believe the cost would have been minimal. And is there any reason Canon would not have this feature on all telephoto lenses?

I'll be happy to forward your request to add a distance limiter switch to lenses like the EF-S 55-250 IS, but frankly I don't expect to see this feature on lenses lower than the L-series anytime soon. It's a marketing decision, and it also helps to control the cost of the lens. In the absence of that feature, there is a custom function on the EOS 40D that can be helpful: Custom Function III-1, Lens Drive when AF Impossible. Turning on this CF will prevent the lens from hunting when it loses track of the subject. It can really save a lot of time in the field. I also recommend using Custom Function IV-1 with the setting of your choice to control the AF process. Some photographers prefer IV-1-1, which allows you to keep AF on the shutter button and use the back button to suspend it; other prefer IV-1-3, which places AF on the back button and separates it from shutter release. In either case, you gain the power to stop and start lens drive instantly. This can also prevent unwanted AF search, and it can be used in tandem with Custom Function III-1-1.

To follow up on your August 2007 answer on AF in low light, I'd like to know if there's a way to use only the AF Assist beam of the Speedlite 580EX II on the EOS-1Ds Mark III, without the flash firing at all. This would be for those situations where flash isn't allowed, but the ambient lighting doesn't allow the on-camera AF to function.

Custom Function II-6-1 on the EOS-1Ds Mark III camera allows the AF Assist beam to function while preventing the flash from firing. If that's what you want, be sure to leave Custom Function III-14 set to 0, the default setting. Also, make sure the camera is set for One-Shot AF, since the AF Assist beam is never emitted in AI Servo AF or manual focus.

Currently I'm using a card that was rated by Rob Galbraith at about 5 MB/sec. with the EOS-1D Mark III camera. A 16GB Sandisk Extreme III is rated at about 9.75MB/sec, and Sandisk Ducati 8GB (largest size available for Ducati) is at 10.9 MB/sec. I do have a serious issue where the buffer fills

up after a short burst and I have to wait...and typically watch the best moments pass by. If I went from my current 5mb/sec. to 9.75mb/sec. ... will that give me a much longer burst range? Like double the number of continuous frames then stop? How about 10.9 MB/sec.? How fast does a card have to be in order to stay ahead of the camera's buffer if this is possible at all? Oh...I am shooting writing RAW to both CF and SDHC Transcend 16 GB (full redundant backup) media and need to record on the same setting with the faster cards.

The camera's buffer memory is used before the image data is written to a memory card, so the card's speed is not the big issue here. At best with the 1D Mark III, your burst rate is going to be approximately 33 to 36 RAW images or 110 consecutive Large JPEGs at 10 fps, even with the fastest memory cards available. The number of shots will vary according to other settings; for example, you'll get fewer frames if you are shooting RAW + JPEG, etc., but one of the biggest buffer "killers" is setting the custom function for in-camera high ISO speed noise reduction. If you want to maximize the 1D Mark III's burst rate, shut that one off and do your noise reduction in post-processing.

Great tip. But I noticed that my N.R. CF is off already. Hmmm Canon Tech Support advises to use only 133x card due to error-prone faster cards ... also that a 16-gig card must be read entirely first to find available blocks; hence, use the smaller cards. Am I wrong to believe technology is simply not here yet to not have a camera hang after depleting the buffer, since no card can write fast and reliable enough to prevent the buffer from filling? FYI...I get nowhere near the 33 consecutive RAWs (writing CF RAW and backup RAW on the SDHD). Again, my cards are rated at 5 MB/sec., but even at the top 14 MB/sec. ... the card will not be able to empty the buffer fast enough ... no?

You may have misinterpreted part of what Canon's customer support was saying about the choice of memory cards for the 1D Mark III. The camera does not support UDMA, which means that there's a limit on the data transfer speed when writing to the card. Because of that, if the camera's card writing speed is the only consideration, ultra-high-speed memory cards won't make much of a difference if any in terms of camera performance. For what it's worth, I have not been hearing any complaints about data errors with the 1D Mark III, either through my own professional photographer contacts or through CPS. If this were a chronic problem, it would have been widely reported by now. Also, the 1D Mark III is clearly compatible with a wide range of memory cards with speed ratings exceeding 133X, as shown in Rob Galbraith's online database for CF and SD card performance.

http://www.robgalbraith.com/bins/camera_multi_page.asp?cid=6007-9038

As you noted, this table shows that the 1D Mark III's card writing speed is limited to approximately 10MB per second with CF and 14MB per second with SD. That's nowhere near the transfer speed capability of the high-speed cards themselves, as shown by their performance when connected to a personal computer with a high-speed card reader. In some cases, you could be looking at transfer speeds of 30MB per second or more, so in this context, the camera is clearly the limiting factor. On the other hand, a slow memory card like the 5MB per second example you mentioned could very well reduce the 1D Mark III's burst rate below its maximum potential. Coming back to your original question, there is no doubt that using a higher speed card could maximize the number of shots per burst. But it should be clear that the best you're going to get under any circumstances with the 1D Mark III is approximately 33 to 36 RAW images per burst at 10 fps. In other words, once the card speed exceeds a certain point, the camera becomes the limiting factor as I previously mentioned. And conversely, once the card speed falls below a certain point, it becomes the limiting factor instead.

A question regarding the EOS-1D Mark II and Speedlite 580EX. I just want to see if there is something I may be doing wrong. I have been using this camera for several years now with no issues. Outdoor shots are pretty much dead-on with little or no Photoshop correction. Flash photos are another thing. At my granddaughter's birthday party this past weekend I used the flash for all indoor shots. The WB was set to flash, ISO at 400 using the EF24-70/2.8L. When I looked at the images later that day all were sharp; however, the color was off. Color correcting in PS Levels brought the color back to what I saw during the party. Is there a setting within the camera I am missing? This has been a consistent problem/issue with my flash photography. Thanks in advance for your comments.

The camera's Flash WB setting was primarily intended for use with studio strobes, which tend to be cooler in color temperature than Canon Speedlites. The Speedlites are designed to match daylight, which is rated at approximately 5200K, whereas Flash WB is 6000K. As a result, photos shot with a Canon Speedlite at the Flash WB setting tend to turn out a bit cool, especially in situations where the flash is providing all or most of the illumination for the exposure. You would be better off to set Auto White Balance (AWB) rather than the preset Flash WB when using any Canon Speedlite with your EOS camera. That's probably all you'll need to do to get the color balance you're looking for, although you may want to experiment with your camera's Manual WB or WB Shift feature if you feel like tweaking the color balance any further.

With the EOS-1D Mark III, do AF Microadjustments carry over to manual focus when the shot is taken using Live View? In other words, if you adjust the focus manually on the LCD screen using Live View and then take the shot, would the AF Microadjustments kick in? I hope I explained this

correctly. I posted this question on a couple of Web forums but nobody seems to know the answer. Thanks!!

AF Microadjustments have no effect on manually focused photos with or without the use of Live View. They can only take effect when autofocusing is active. However, one thing that may be throwing you off is that the image on the LCD screen during Live View at 5X or 10X magnification is intentionally sharpened to make manual focusing easier. You can still control the degree of sharpening applied to the recorded image by adjusting the camera's sharpness settings (with in-camera JPEGs) or during post-processing (with RAW image data). The fact that Live View's sharpening of the LCD image during 5X or 10X magnification is independent from the level of sharpening applied (or not) to the actual image is something that you'll need to get used to if you plan on doing a lot of work in Live View mode.

If I activate second-curtain sync on my Speedlite 580EX, but haven't enabled it in the camera's custom functions, will second-curtain sync still work? I'm asking because the Flash Exposure Compensation setting on the flash overrides the camera's setting, as far as I know.

An EOS camera's custom function for second-curtain sync applies only to the built-in flash and certain EX Speedlites (220EX and the discontinued 380EX and 420EX models) that don't have a second-curtain sync switch of their own. Whenever you're using a 430EX, 550EX, 580EX, 580EX II, MR-14EX or MT-24EX, the second-curtain sync setting (on or off) on the flash always takes precedence. The only exception occurs during E-TTL wireless flash, because second-curtain sync is automatically disabled in wireless flash configurations.

I just wondered... Should Canon be making a range of optional professional hoods for their L series lenses when used on a 1D body with its sub-full frame format image sensor? It seems that all the lens hoods are designed for full-frame 35mm film (except in the EF-S range), i.e., they are made ideally for use on the 1Ds and 5D models. For optimal picture quality, would a deeper lens hood be of any practical value when these lenses are used on a 1D-series camera? My math says a 16-35mm lens used on a 1D camera needs a hood designed for an effective focal length range of 21-46mm and a 24-70 lens needs a hood designed for 31-91mm, etc. After all, it seems like a lot of effort goes into getting a petal hood just right – but just right for what? Don't crop factor calculations count when it comes to lens hood design? Can you elucidate?

Your math and logic are correct, but in my opinion this request falls into the category of "technically possible but highly unlikely." However, if you want to take action on this idea by yourself, there is an independent Web site that provides PDF versions of Canon lens hood templates that you can print and cut out on various paper stocks. It's interesting because they provide modified hood designs

that adjust the length of the hood according to the imaging format (full-frame, APS-H, and APS-C).

<http://www.lenshoods.co.uk/>

How can I get information on the various basic shooting modes on my EOS Rebel XSi? (I do understand P, Av, Tv, M, and so on.) I can't find the information in the owner's manual. I'd like to know, for example, for each mode (e.g., landscape, sports, portrait, flash off) what the camera is doing with respect to shutter speed, aperture, sharpness, contrast, white balance, skin tone, and so on. All I can find is information that says when each mode is suggested. If it is in the manual, I'd be grateful if you could point out where I might find it, and if it isn't (as I said, I couldn't find it), I'd be grateful to know how I could get the information.

Canon does not publish detailed information on the full range of exposure settings and image processing parameters for the Basic Zone shooting modes of EOS Rebel cameras. However, you can learn more about these modes at the Canon Digital Learning Center Web site. There is a dedicated section on exposure modes in the Digital Rebel XT tutorials here:

http://www.usa.canon.com/content/rebelxt_tutorial/rebelxtlessons.htm

Please review Chapter 11 for more information. Although originally written for the Rebel XT camera, this section is equally applicable to the Rebel XTi and XSi models.

With regards to the EF70-200mm f/4L IS USM lens, notwithstanding the battery power considerations mentioned in the manual, does this lens have the ability to detect when it's on a tripod?

The EF70-200mm f/4L IS USM has the ability to detect when it is mounted on a tripod. If you keep the shutter button half-pressed, or better yet, use a remote switch to simulate a half-press, the stabilizer mechanism will drift the image downwards for the first second or so, then the mechanism will stop moving. (It's for this reason as well as battery power conservation issues that the instruction booklet recommends shutting off the IS system while the lens is mounted on a tripod.) You can see the effect if you look through the viewfinder while half-pressing the shutter button. However, it is important to understand that this form of disabling is different than shutting off the IS function with the mode switch on the lens. In the latter case, the IS mechanism is centered and locked into place, whereas in the former case, the IS mechanism shifts the image downward slightly for a second or so, then stops moving. It's not moving, but it's not centered or locked, either. It's effectively on standby, so that it can resume its corrective capabilities instantly if movement is detected. Again, you can see this for yourself by looking through the viewfinder while pressing the shutter button

halfway for at least several seconds, assuming the lens is mounted on a tripod and the IS switch is on. To my way of thinking, this is not the optimum way to use the equipment. In my opinion, if you use the EF70-200mm f/4L IS USM on a tripod, it would be best to turn off the IS mechanism via the switch on the lens, rather than depending on the tripod detection capabilities of the IS mechanism.

Just a quick note before we begin to say that this month's edition of Tech Tips marks the 3rd anniversary of the column here on The Digital Journalist. A hearty thanks to Dirck Halstead, Cecilia and Connie White, Mark Wilkie, and others who make this Web site possible month in and month out, and as always an especially warm thank you to all of our readers, especially those who have taken the time to send in their questions and comments.

I have owned or extensively used the 1D, 300D, 20D, Rebel XT, 1D Mark II, and the Rebel XTi. I mainly shoot JPEGs because, given my time, I want shots that are pretty much good-to-go right out of the camera, without need of too much post-processing. Notwithstanding ISO advances and increased megapixel counts, when I look back at my many thousands of pictures, I often find that the 1D shots look noticeably sharper, despite being the oldest, smallest MP of them all. One neat feature of the 1D, absent in the 1D Mark II, was the ability to set the sharpness all the way to 5, but at the superfine setting, seemingly minimizing undue roughness to the images.

Is one Canon DSLR model's sensor sharper than the next, or is it a function of different algorithms in the JPEG processing as the shots are written to the card? My understanding is that even "RAW" images have been processed in many ways before being written. If one were to take the same shots with the same lenses, but with different Canon DSLRs, and process them all from RAW with the same settings, would there be substantial differences in sharpness?

Default sharpening for in-camera JPEGs with EOS Digital SLRs is affected by several factors including the strength of the camera's anti-aliasing filter as well as the camera's sharpness settings. Image sensor resolution by itself has almost nothing to do with it.

One school of thought holds that for maximum control over sharpness, digital images should be recorded with no sharpening, and that all sharpening should occur during post-processing. Another school of thought holds that for speedier workflow, sharpening and other image processing parameters such as contrast and saturation should be applied in-camera so that the resulting JPEG images can be printed immediately with little or no post-processing.

Canon has always provided enough control in its EOS Digital SLRs for photographers to pick the image processing parameters they prefer, without

forcing the photographer into an either/or situation. In this scenario, RAW data provides the greatest flexibility, but each camera model is equipped with a variety of settings to control the sharpness, contrast and saturation of in-camera JPEGs. That said, it's true that the default settings for in-camera JPEG sharpness have varied widely across different models in different eras. For example, the 1D Mark II by default had zero sharpening in its in-camera JPEGs and was equipped with a strong anti-aliasing filter, while the original 1D had a much weaker AA filter, and was tuned for higher sharpness with in-camera JPEGs at its default settings. Starting with the 1D Mark II N and 5D in 2005, Canon updated to its current "Picture Style" settings, which set default sharpening to a mid-scale value rather than zero. Canon has maintained this basic philosophy ever since, in great part because the company wished to unify the image quality settings of all current EOS models.

Ultimately, for photographers like you who wish to control the sharpening of in-camera JPEGs in order to reduce post-processing, it's a good practice to make test prints at each of the offered sharpness settings so that you can decide which setting you prefer. If for some reason you find that you want even more control over sharpening than the in-camera settings provide, it's always possible to apply more (or different) sharpening during post-processing. Current models like the Mark III series and the 40D also provide in-camera noise reduction for high ISO settings, which can further improve the appearance of in-camera JPEGs shot at those settings. Last but not least, these same current models are also compatible with Canon's new "Picture Style Editor" software that lets photographers fine-tune many image processing parameters beyond the capabilities of the in-camera settings, then upload that fine-tuning to the camera for use with in-camera JPEG images. This program is bundled with new EOS cameras at no extra charge.

I'm the AP staff photographer in Salt Lake City. Our standard camera for the past several years has been the EOS-1D Mark II. I got the first batch before the 2004 Summer Olympics. I requested a 5D to take advantage of its full-frame chip. It came a couple of days ago. So far, I love it. However, I'm finding color and contrast differences between it and my Mark IIs when both are set at the same white balance, including Kelvin. Both cameras are set at Adobe RGB. I realize that both have different electronics and software. But before taking the time to map both cameras via testing, does Canon have a comparison chart online or somewhere that already has equivalents?

The image quality settings for the EOS-1D Mark II, which used the old Color Matrix system, are not directly comparable to the EOS 5D, which uses Canon's current Picture Style settings. Unfortunately, Canon Inc. R&D never provided an official conversion guide for all the Picture Style settings to match up to all the Color Matrix settings, so the instructions for matching image quality characteristics between these two models depends on which camera you're

trying to match. For example, the "Standard" Picture Style on the 5D has considerably more contrast and saturation than the Color Matrix 4 Adobe RGB setting on the 1D Mark II. If you want to match the 5D to the 1D Mark II set to Matrix 4, you'd have to start by setting the 5D to Adobe RGB, and then select a different Picture Style, such as Neutral. Next, you would need to dial down the contrast and saturation in Neutral to get close to the effect of the Matrix 4 setting on the 1D Mark II. I can't tell you definitively how far to dial down the contrast and saturation on the 5D in Neutral and Adobe RGB to match Matrix 4 on the 1D Mark II, but my unofficial recommendation is to try a -2 on both settings in the 5D as a starting point. On a related point, the original concept behind the low contrast and low saturation of Matrix 4 on the original 1D and 1D Mark II cameras was to preserve as much image information as possible in a JPEG file, so as to enhance editing flexibility during post-processing. Canon got a lot of feedback from pros that they wanted more control over these settings for in-camera JPEGs in order to speed up their workflow, and that's one of the main reasons why the company migrated to the Picture Style concept starting in 2005 with the 1D Mark II N and the 5D. All current EOS Digital SLRs use Picture Style settings.

Is it possible to use manual flash exposure control with a Speedlite 430EX, 550EX, 580EX or 580EX II when it is in slave mode and it is triggered by a Speedlite Transmitter ST-E2 mounted on my EOS Digital camera? If so, how?

Manual flash exposure is available when using the ST-E2 and any compatible EX-series Speedlite including the 430EX. Here's how:

- 1) Set the 430EX to slave mode and power up the flash.
- 2) Hold the MODE button down for three seconds or until the ETTL icon on the LCD data panel switches to a flashing M. This indicates that the 430EX is now in manual flash exposure mode. The M icon will continue to blink on and off as long as the 430EX is in manual flash exposure mode during wireless operation. This is normal.
- 3) To adjust the manual power setting on the 430EX in slave mode, press the SEL/SET button for a second or so until the power ratio icon begins to blink. Press the gray semi-circular adjustment buttons to the left or right of the SEL/SET button to adjust the power ratio from 1/1 (full power) to 1/2, 1/4, 1/8, 1/16, 1/32 or 1/64. Do this within five seconds of pressing the SEL/SET button or the current setting will be registered.
- 4) Position the 430EX as desired, then activate the ST-E2 on camera and fire away. Note that the communication channel on the ST-E2 must match the communication channel on the 430EX. Also, note that the ETTL LED on the ST-E2 will light up even though the 430EX is set to manual flash exposure mode. This is normal.

I've just bought a Canon 40D and am having problems setting it up for second curtain flash with a 550EX flash. The flash control settings for setting it are grayed out and for C. fn settings, I get the message, "incompatible flash." I have tried it on three different 550ex's, with no change. Searching threads and Google told me nothing. Any and all suggestions welcome.

Speedlite 550EX (discontinued about four years ago) has the same level of compatibility with the EOS 40D as it has with other EOS bodies. Accordingly, second-curtain sync with the 550EX is set on the flash itself whether it's used with the 40D or any other EOS camera. To set it up, press the + and - buttons on the back of the 550EX twice simultaneously. Look for the second-curtain sync icon in the upper right corner of the 550EX's LCD panel.

Currently, the flash control menu on the camera is fully compatible only with the built-in flash and Speedlite 580EX II. All it can do with the 550EX is to set flash exposure compensation and E-TTL II flash metering patterns. That's why the other settings are grayed out and you're getting an error message when you attempt to set the 550EX's custom functions from the camera body.

Many thanks, that works a treat. I knew Canon would have a way ! One more question: How do I get the Info Button Shoot Function information to return to the back screen automatically after reviewing a shot. I have to press the Info button again to show the present settings of the camera.

Here's how:

1. Go to Setup Menu 1 on the 40D's LCD screen. (Press MENU, then use the main dial next to the shutter button to select the first yellow icon on the top row, the one with the wrench and a single dot.)
2. Scroll down to "INFO button" with the Quick Control Dial on the back of the camera and press SET to access the submenu.
3. Select "Shoot. func." and press SET to register that setting.
4. Tap the shutter release halfway to extinguish the menu display, then press the INFO button to see the camera settings on the rear LCD screen.

The camera settings should remain illuminated on the screen for as long as the 40D's Auto Power Off setting has been set or until you take a picture, whichever comes first. If you take a picture while the settings are illuminated, the display will return automatically as soon as your "Review time" expires, and this cycle will repeat indefinitely. Note that you can adjust both the Auto Power Off setting and the review time setting in the LCD menus. Defaults are 1 minute and 2 seconds, respectively.

If the display shuts off before you take a photo, or if you are just powering on with the camera's main on/off switch, all you need to do is press the INFO button again before the next shot to reset the sequence.

My understanding is that the focus screen needs to be optimized for the AF system and the amount of light being passed to my eye is not accurate at wider apertures in regards to the actual depth of field (DOF). I think this also explains why you cannot see any changes in viewfinder brightness in the camera from f/1.4 until you reach f/2.8 when holding the DOF preview button. Can you (caution, bad pun ahead) shed some light on this?

Actually, focusing screens have nothing to do with conventional SLR autofocus systems. AF detection in most modern SLR cameras is carried out by a mechanism that's positioned in the base of the mirror chamber. Incoming light reaches this mechanism by passing from the lens through the semi-transparent main reflex mirror to a sub-mirror that redirects it downwards. The focusing screen, on the other hand, is positioned above the main mirror, which reflects incoming light towards it.

That said, it is true that most standard focusing screens for modern SLRs such as the EOS 5D are designed to provide a reasonable balance between viewfinder brightness and manual focusing capability. The Ee-A standard focusing screen for the EOS 5D is bright enough (and accurate enough) for manual focusing under most lighting conditions with virtually any EF lens regardless of maximum aperture. However, because of the design of the microlenses on the surface of the Ee-A, the depth of field shown through the viewfinder never appears to be shallower than approximately f/2.8. Therefore, when using a lens faster than f/2.8, the depth of field in the resulting photograph may be shallower than what's shown in the viewfinder if a working aperture larger than f/2.8 is selected. This effect can be readily seen when comparing the viewfinder image to the LCD screen during replay, if you take time to look for it.

If this is an issue for you, Canon offers an optional focusing screen called the Ee-S Super Precision Matte Screen. This focusing screen uses more powerful microlenses than the standard Ee-A screen, with the result that out-of-focus areas in the viewfinder are more accurate to the actual depth of field in the resulting image. This has the effect of making it easier to determine the exact point of focus during manual focusing, especially with high-speed lenses like the EF50mm f/1.4 USM or EF50mm f/1.2L USM. However, it also has the effect of making the Ee-S focusing screen noticeably darker than the Ee-A screen when using lenses with maximum apertures smaller than f/2.8. (No free lunch!)

Thanks for your remarks in last month's *Tech Tips* column describing phase detection AF on the dedicated AF sensor vs. contrast detection AF on the image sensor. This inspires a question that has been on my mind for a while. Is there a physical difference between the electrical sensors that

detect light on the AF sensor vs. the image sensor? Is there any reason why the image sensor can't record phase data for AF?

Dedicated sensors of the type used for phase detection AF in digital SLRs are somewhat similar to image sensors used for Live View in the respect that both contain photosites that are light-sensitive. If that's all there was to consider, then it would seem possible to use image sensors for phase detection autofocus measurements. However, the phase detection system also requires a set of secondary lenses to separate the light to be analyzed by an individual focusing point into pairs of beams that are then projected towards the AF sensor. Normally, there are no secondary lenses between the lens mounted on the camera and the image sensor, so phase detection AF with the image sensor is not available.

Having just bought a new PC with the Vista 64-bit operating system, I am disappointed that Canon has not produced a 64 bit CODEC for viewing their RAW files in Windows. This was possible in Windows XP and, it seems in 32 bit Vista. I realize other applications can be used but native Windows viewing is convenient. The Microsoft 'pro photography' Web site lists the support from various camera manufacturers and at least one - Olympus - has produced a Vista 64 CODEC. I think Canon is missing a trick here. It can't be that much work, can it? Are there any plans to release such a CODEC?

To date, there is no information to indicate that there are any plans to add support for 64-bit versions of Microsoft's Windows Vista OS to future versions of the Canon WIC codec, but that doesn't mean it will never happen. However, Canon's current proprietary RAW conversion software is compatible with both 32-bit and 64-bit versions of Windows Vista. There are two such applications: RAW Image Task, which is a sub-program that runs within ZoomBrowser EX, and Digital Photo Professional, also known as DPP. These software apps are bundled with current EOS Digital SLRs at no extra charge.

Although this is somewhat outside the scope of your questions, Canon also supports tethered operation for a select group of EOS Digital SLRs via Canon's EOS Utility software application. EOS Utility software is compatible with 64-bit versions of Windows Vista, but camera model compatibility in that OS is currently limited to EOS-1Ds Mark III, EOS-1D Mark III, EOS 40D, EOS Rebel XSi and EOS Digital Rebel XTi. All of these cameras are currently available except the Rebel XSi, which is due to be released this month.

I just took delivery of an EOS-1Ds Mark III and wanted ask a question about ISO to ensure I'm optimizing the quality of images from this fantastic camera. I've been doing studio work with my EOS-1D Mark II and II N on the extended ISO 50. Is there any quality compromise when using this lower ISO? I was using it thinking I would be getting better quality with the lower

ISO, but I read something to the effect that it actually increases noise and that extending the range is only a method of light- not quality-management. Am I better off shooting at ISO 100?

The standard ISO range for the EOS-1Ds Mark III camera is 100 to 1600. Optional settings for ISO 50 and ISO 3200 are enabled via menu command, and are indicated on the camera's LCD data panel as "L" for Low and "H" for High, respectively. Part of the reason behind this is that these settings are not truly ISO 50 or ISO 3200. Instead, in the case of "L," you're looking at ISO 100 processed by the camera to achieve an effective rating of ISO 50. Similarly, "H" means that the camera is processing an ISO 1600 image to achieve an effective rating of ISO 3200. "L" images have about the same level of noise as ISO 100 images, but they have less "headroom" in their tone curves to recover overexposed highlights than do ISO 100 images captured with the 1Ds Mark III. This is typically not a problem with evenly lit scenes, but it may become an issue with scenes that have a lot of dynamic range to them, such as sunsets, backlit flash photos, etc.

ISO 50 can be helpful when you are trying to achieve a creative effect, such as a wide aperture to blur the background behind the main subject, for instance in portraiture. It can also be helpful when you are using studio strobes and you don't want to stop down the lens excessively, or in outdoor situations when you want a longer shutter speed to blur subject movement like the water in a waterfall. But if none of these situations apply, you are better off to use ISO settings in the 100 to 200 range in terms of overall image quality and maximum dynamic range.

I was wondering if you can answer a question I have regarding the High ISO Noise Reduction feature (C.Fn II-2) available on the Mark III cameras and the 40D. The following is a snippet from the last page of the Canon document called "Tailoring the Camera for Different Situations":

"High ISO images that are predominantly high-key subject matter (example: available-light ice hockey pictures in an arena) will sometimes show more of a 'salt and pepper' appearance from remaining luminance noise if the Mark III's High ISO Noise Reduction is applied. Users should run tests to see whether there's any negative impact when it's applied. This is one advantage of shooting RAW files; in either of the two supplied Canon RAW file processing software applications, Digital Photo Professional or RAW Image Task, you can apply or remove High ISO Noise Reduction, making it easy to see the same file 'before and after.'"

The snippet seems to imply that the high ISO noise reduction feature is a metadata tag which can be turned on and off via DPP or Raw Image Task and does not affect the RAW image that is actually recorded. However, my testing seems to indicate otherwise. When I shoot two RAW images, one with C.Fn II-2 turned off and the other with it turned on, and process it with

Adobe's Camera Raw program, I get one image which has a lot of high ISO (chrominance) noise (C.Fn II-2 was set to 0 for this shot) and another with no high ISO noise (C.F II-2 was set to 1 for this shot). This seems to indicate that the Mark III actually does reduce the high ISO noise in the image before the RAW image is written out based on my assumption that ACR ignores the metadata tags in the RAW file and hence, should not be doing any type of processing to reduce the high ISO noise based on the setting of one of these metadata tags. Is my assumption wrong? Taking this a step further, if the high ISO noise reduction feature is implemented via a metadata tag, then how is this feature turned on or off in DPP? The only tool that I can find relating to noise reduction is the NR tab in the DPP tool palette.

Thanks for your question. Perhaps the article could have been clearer on this point, but according to my reading of it, the author was trying to compare in-camera high ISO noise reduction (by itself) to DPP noise reduction (by itself). In that comparison, DPP offers more control since it has separate sliders for luminance and chrominance noise reduction that are freely adjustable from 0 to 10 (in DPP 3.3) versus a simple Off and On setting in camera that makes no distinction between chrominance and luminance NR.

The article does not explicitly discuss whether in-camera high ISO noise reduction affects RAW image data with the Mark III cameras and the 40D. However, examination of comparison files in DPP clearly shows that it does not. I can't comment on another manufacturer's software application, but you may want to try the same experiment for yourself with DPP to verify this point.

I was curious about the advantage, if any, of UDMA compact flash cards (such as the SanDisk Extreme IV series) versus slower non-UDMA cards on Canon cameras other than the 1Ds Mark III, the only Canon camera to support UDMA. I've been debating buying UDMA CF cards but don't know if it will actually be faster on my 40D & 350D.

Because current EOS models other than the 1Ds Mark III do not take advantage of the special features of UDMA memory cards, the biggest advantage when using such cards with these models occurs when using a UDMA-compliant card reader to transfer captured images to your personal computer. In the case of SanDisk Extreme IV cards, the SanDisk Extreme FireWire reader is probably the best choice, but you should check with SanDisk for details.

Is it possible to connect two Canon digital cameras to one Mac computer for tethered shooting?

Even though it's possible to connect two EOS Digital SLRs to one Mac computer via USB, Canon's EOS Utility software can only "see" one camera at a time for tethered shooting. I haven't seen any Mac-compatible software that can handle

two cameras simultaneously for tethered shooting, but there is a solution for Windows Vista and XP computers from Breeze Systems, an independent software developer. It's called "**DSLR Remote Pro Multi-Camera**," and here is a link to some information on it:

<http://www.breezesys.com/MultiCamera/index.htm>

I would expect that this software could be used on a current Mac running Windows in either Boot Camp or Parallels, though I haven't personally tested it. DSLR Remote Pro Multi-Camera can be downloaded at no charge in a trial version, so you could try it risk-free to see if it meets your needs.

Another way of connecting multiple EOS Digital SLRs to one computer (Mac or PC) is via Canon's optional Wireless File Transmitters. Current models like the 1Ds Mark III, 1D Mark III and 40D support Remote Live View mode, which is more advanced and flexible than EOS Utility for tethered shooting. The computer can still see only one camera at a time in this configuration, but it is possible to support up to nine cameras transmitting to the same computer.

I've been having problems with the 1Ds Mark III crashing in Mac OS X 10.4.11. I've spent lots of time on the phone with tech support with no luck. I even tried updating to Leopard; still no luck. I've had this camera since the first week in December and it has given me nothing but problems on the Mac (on PC it works just fine). Do you have any suggestions?

Please review the following service notice concerning the use of Macintosh version of EOS Utility 2.2 software for tethered operation with the EOS-1Ds Mark III, EOS-1D Mark III, and EOS 40D.

<http://www.usa.canon.com/consumer/controlle...>

In short, Canon identified a bug with the Macintosh Version of EOS Utility 2.2 software that causes a program crash when releasing the shutter button on the camera during tethered operation with any of the cameras listed above. The solution to this problem is to replace EOS Utility 2.2 with EOS Utility 2.3. Please refer to the Web page for more details and a link to the new software. This information was just posted the day before you sent your message, so it's likely that our tech support teams were not aware of it before then. Hope this helps! Please let me know your results after you've installed the new software.

UPDATE: I received the following note from the same reader: *Thanks for the information, I tested the new software last week and it worked just fine. I went on a big job this week at a 10 million dollar-plus house in Fort Lauderdale and it performed outstandingly, just like my 1Ds Mark II used to. Again I'm glad they finally got a fix for it.*

Is there a formula for calculating the angle of view for a lens mounted on an APS-C digital SLR? Most lens charts only seem to show angle of view for the full-frame 24 x 36 mm format. This question has come up in class a few times and I am at a loss to figure out the math.

A reasonably accurate way of calculating the angle of view for a camera equipped with an APS-C sensor compared to a camera equipped with a 24mm x 36mm sensor is to use the ratio of the diagonal lengths of each format. This is somewhat complicated by the fact that not all APS-C sensors are exactly the same in terms of image area: for instance, Canon's APS-C sensors have ranged from 15.1mm x 22.7mm for early models like the D30 and D60 to 14.8mm x 22.2mm for recent models like the Rebel XTi and XSi. APS-C cameras from other manufacturers have sensor sizes that are a bit larger than that, at approximately 15.8mm x 23.6mm or thereabouts, so if you want to be as accurate as possible you need to know the actual dimensions of the sensor for your particular camera model.

But for the sake of explanation, let's just pick a measurement like 14.8mm x 22.2mm and be done with it. In that case, the diagonal of the format is approximately 26.7mm. The diagonal of the 24mm x 36mm format is approximately 43.3mm, so the ratio of this particular APS-C variant to full-frame is approximately 0.617x, i.e., 26.7 divided by 43.3. With that information, we can take the diagonal angle of view for the 24mm x 36mm format and multiply by 0.617 to get the diagonal angle of view for APS-C. Taking a 50mm focal length as an example, the diagonal angle of view for the 24mm x 36mm format is approximately 46 degrees, so the diagonal angle of view for the same focal length on the APS-C format is approximately 28.4 degrees.

I have several technical questions as follows:

Focus points – I find that my style of shooting requires me to focus and recompose because the focus points on most cameras are generally centered, and my main subject is quite off-center. I hear that sports shooters also have this problem. Even the EOS 3 with its 45 points covering mostly the center of the frame I had to recompose and now with the EOS 40D I find the same problem. Are there any technical reasons for the focus points being centered, or is it a design choice? It would be much better to have focus points available in the extreme corners, almost like an outer ring of focus points for these specific situations. Is this technically possible?

Lens aperture for focusing operation – It's a given that most consumer cameras (Minolta/Sony excepted) can focus down to f/5.6 and pro cameras can do so down to f/8. This has been mostly true for the last 20 years of AF photography. Is it not now possible with these high ISO digital cameras to improve on that and have AF working at f/8 on all cameras, or even f11?

Surely phase-detect focusing must have advanced along with the other camera functions? Is it perhaps a marketing issue or are there physical impediments to extending AF performance with small aperture lenses? One last item - is it possible to integrate phase and contrast detection to have the best of both systems working to achieve a faster and better focused image, or operate when light levels are low (i.e., use the best focusing system when the conditions require it)?

ECF Focus – Eye Controlled Focus is a Canon exclusive function. I had it on the EOS 3 and mostly it worked well and helped avoid some of the focus-and-recompose situations. However, after the EOS Elan 7NE it has not been offered anymore, and certainly not in any digital camera. Is this simply a marketing issue? The fact that ECF was in a consumer film camera (costing not more than \$400) makes me think that this feature isn't particularly expensive so could be added without significantly altering the cost structure of newer DSLRs?

Thanking you in advance for your replies.

1. There are several technical reasons why it's difficult to position focusing points near the edge of the frame on a 24mm x 36mm format camera. It's basically a "Catch-22" situation:

a) The phase-detection AF method that's been in use on most analog and digital SLRs since 1985 relies on a detection module positioned in the base of the camera's mirror chamber. Incoming light passes through the main reflex mirror to an auxiliary or sub-mirror, which reflects it down to the AF detection module. It is physically impossible to increase the width or height of the sub-mirror beyond the limits of today's technology without losing the light from the edges. However, within the limits of focus point positioning, phase detection AF is fast and accurate, and high-quality predictive AF (i.e., focus tracking) is possible.

b) The contrast-detection AF method that's been in use on most compact digital cameras reads its data directly from the image sensor. The nature of this system permits focusing points to be positioned virtually anywhere in the picture area, but the drawback is that the contrast detection method is slow and not responsive enough for fast moving subjects. Another complicating issue is that focus tracking between shots during continuous shooting is virtually impossible. New digital SLR cameras like the EOS Rebel XSi provide both phase detection AF and contrast detection AF (in Live View mode) for the ultimate in flexibility, but each AF system has clear limitations as outlined above.

2. The f/5.6 limitation for maximum aperture in phase-detection AF has virtually nothing to do with the level of light presented to the system. Instead, it's a matter of the diameter of the beam of light that's projected towards the AF detection module versus the width of the AF sensor arrays. Therefore, I doubt that there's

going to be any significant change in the specifications for maximum aperture range as long as SLR cameras continue to use phase detection AF.

3. I have stated numerous times on the Web and at least twice in *Tech Tips* that it is obvious by now that the omission of ECF in EOS Digital SLRs is a marketing decision, not a technical issue. We get user requests for ECF from time to time, but to be blunt, customer demand so far has been insufficient to justify adding this feature. I'll never say never, but don't hold your breath on this one.

I have a problem with a Mark III used with a 17-35 f2.8 and a 550EX flash in dark situations. In One-Shot AF sometimes the shutter does not release. If I put the AF in AI SERVO the shutter releases but all the images are out of focus. Are there some incompatibilities between the new camera and the old lens and flash? Can some function make this system work better?

As stated on page 22 in the Instruction book for Speedlite 550EX, the 550EX's AF Assist beam is intended for use with focal lengths of 28mm and longer. You should still be able to use it throughout the entire zoom range of your EF17-35mm f/2.8L lens when manually selecting the camera's center focusing point, but the coverage of the beam may become inadequate for off-center focusing points when using focal lengths shorter than 28mm. Additionally, the usable distance range of the 550EX's AF Assist beam is approximately 10 meters/33 feet at the center, but only 5 meters/16 feet at the edges. Therefore, please be aware that the AF Assist beam may become ineffective with distant subjects, even when using a focal length of 28mm or longer. Last but not least, keep in mind that the AF Assist beam is only active when your EOS camera is set to One-Shot AF mode.

I have a pair of questions concerning point and shoot cameras: If a user decreases the pixel count on a Canon PowerShot G9 from 12MP to 6-8MP does image quality improve at higher ISO settings and in low-light situations? Does decreasing the pixel count essentially create a bigger sensor with fewer pixels, such as is found on a Fujifilm FinePix F30 or F31fd?

There is no significant improvement in noise levels at any ISO setting when shooting in-camera JPEGs at the 8MP "M1" or 5MP "M2" settings with the PowerShot G9, compared to shooting full-resolution 12MP images. However, if you are interested in extracting the maximum image quality the G9 can produce, I would suggest using the camera's RAW mode and applying noise reduction during post-processing in your personal computer. Canon's RAW Image Task software, supplied at no extra charge with the G9, has an Adaptive Noise Control slider that does a good job at reducing noise while retaining a high level of fine detail. The resulting images, especially when printed, tend to be sharper with less noise than those produced by most other point-and-shoot digital cameras regardless of resolution or pixel size at equivalent ISO speed settings.

I am a newspaper photographer, who has been working with EOS 1D series, from Mark I to Mark II, and now our paper has issued us Mark III cameras. I am still a bit behind the learning curve regarding the changed controls, but as I am using the II alongside the III (and 1Ds for remotes as well), I wanted to be able to reproduce my control setup for the new body as well. What I was hoping for, is there some combination of custom functions in the 1D Mark III to allow for the old way, that is, AF Sel. button working as Aperture button in Manual (where the +/- button is then changed to AF selection)?

The control layout of the EOS-1D Mark III with its current firmware cannot duplicate the control layout of the Mark I and II series cameras exactly. I am happy to relay your request for this capability, but in the meantime, I would suggest that you read the following guide for getting the most out of the Mark III cameras:

<http://www.usa.canon.com/dlc/controller...>

I have a Canon EF25 Extension Tube. When I bought my EOS 20D I kept on using it not knowing there had been a new version released, the EF25 II. Are there any compatibility issues to be concerned about?

The II-series EF Extension Tubes (EF12 II & EF25 II) are compatible with Canon EF and EF-S lenses, while the original EF Extension Tubes (EF12 and EF25) were compatible with EF lenses exclusively. There are no compatibility issues on the body side, but you'll need a II-series if you want to use a Canon Extension Tube with an EF-S lens.

I am a newspaper staff photographer and have been using Canon equipment since 1973. I recently got the bug to adapt an old manual-focus Tamron 300mm f/2.8 to the Mark II N bodies I now use. I found a mount on eBay to fit the body and lens together, but every attempt to use it gives Err 01 (faulty communication between lens and camera) and no photo. If I can find a menu workaround I am willing to work with manual exposure and manual focus at f2.8 for specialized uses. Is there a workaround on the Mark II N or the original EOS 1D to get the shutter to fire? Are there any Canon digital bodies that will work this way?

There is a mechanical switch in your EOS camera body's lens mount, at roughly the 10 o'clock position when viewed from the front of the camera, that is normally engaged when a fully-coupled Canon EF lens is attached. This switch causes the camera to send an electronic "handshake" request to the lens to determine its status. The camera is programmed to shut down and display an error code unless it receives a proper response from the lens. Your manual focus lens has no electronic contacts, so the camera thinks the lens is defective and therefore refuses to allow the shutter to be released.

The source of the problem is most likely the lens mount converter. The defective part of the converter is its EOS-side bayonet, which should have been modified in such a way that it would not trip the mechanical switch in the camera body's lens mount. One workaround is to partially disengage the lens from the camera body so the switch isn't engaged. But this is not very secure, and it's impractical unless the lens is mounted on a tripod. Another workaround would be to replace the defective converter with one that has a correctly modified lens mount. Canon used to offer FD-EOS Lens Mount Converters that were properly modified. These products were available from the late 1980s until about 2000, but they are no longer being manufactured or sold. You might be able to find one on the used market, or you might be able to find another independent converter that works properly with your EOS camera.

The instruction manual for the EF24-105mm f/4L IS USM says to use the 77mm Circular Polarizer II, which is apparently a thin-rim filter like I use on my EF17-40mm f/4 L USM. Is the thin filter also suggested for the EF24-70mm f/2.8L USM? All lenses are used on the EOS 1Ds Mark II.

The instructions for the EF24-70mm f/2.8L USM lens do not specify a thin-rim circular polarizer, and it is not an absolute requirement even on a full-frame digital SLR like the EOS-1Ds Mark II. However, since you already own a thin-rim circular polarizer for your EF17-40mm f/4L USM lens, you might as well use it on the 24-70mm lens since they both have 77mm filter mounts.