

# POINT & SHOOT

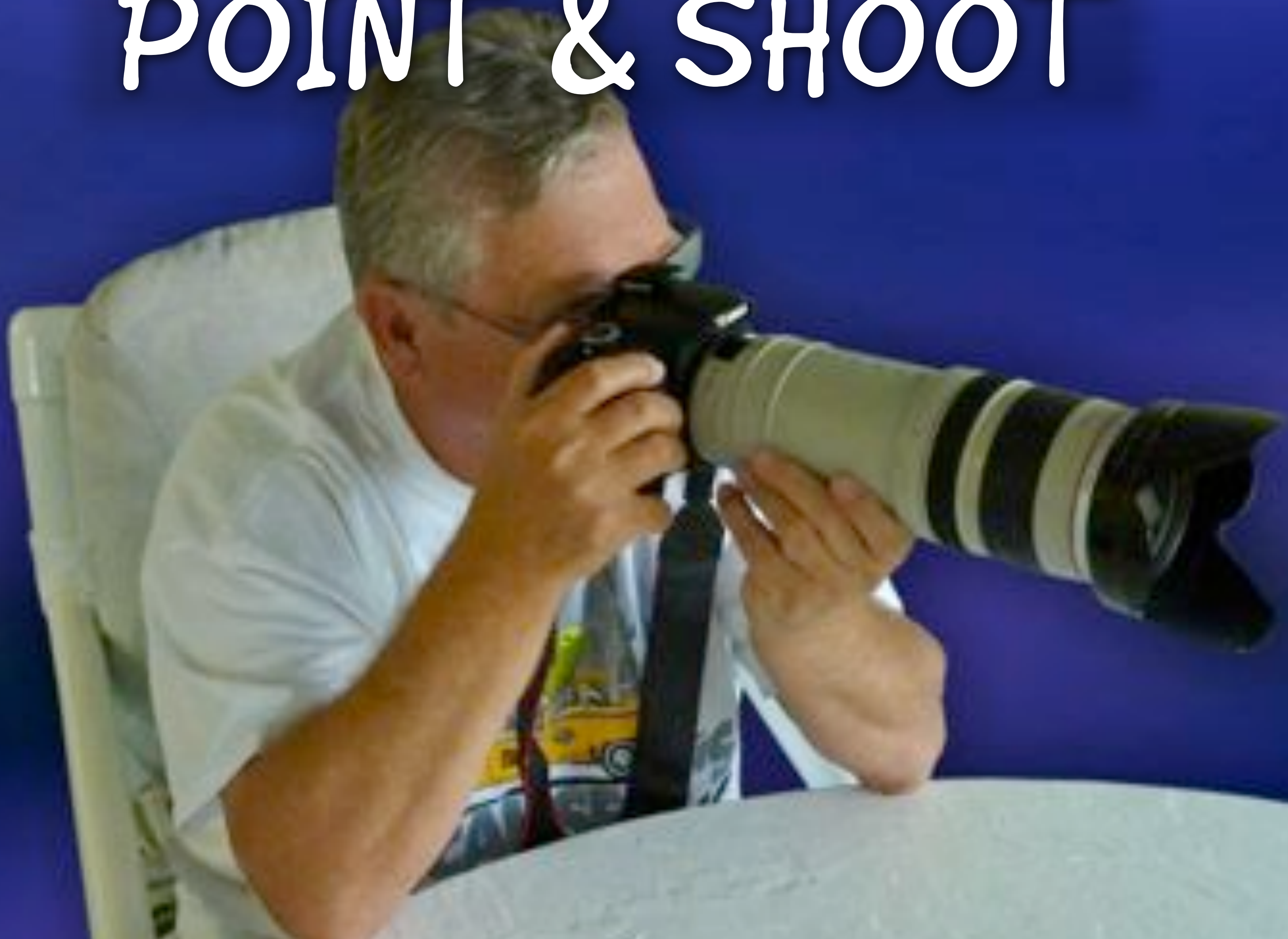


Wednesday, January 8, 2014

“POINT & SHOOT” for our purpose here tonight, is not about guns or weapons.



# POINT & SHOOT



Wednesday, January 8, 2014

It's about photography and cameras. And although Keith is shown here certainly “pointing” and “shooting”, this also is not the subject of tonight's presentation.



# POINT & SHOOT



Wednesday, January 8, 2014

But rather, we're going to talk about those cameras that are generally defined as "Point-and-Shoot" cameras. That is, those fully automatic cameras that hopefully make the task of getting good photographs a bit easier.

For the longest time, I've had a great deal of skepticism about the claims made by manufacturers as to the quality of images one might get using such cameras. But to understand how I developed my mindset, you need to know a bit more about my background.





## SELLING CAMERAS CIRCA 1959

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When I was still in high school, I worked in a camera shop. Not just any camera shop, but one that dealt primarily with high-end quality cameras... not just your “Brownie Box Cameras” of the day. We sold brands like Hasselblad, Voightlander, Bolex, and Leica. In order to effectively sell those products, I had to learn a lot about them.





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And that information served me well. After a few years and a college degree, I began working in the photographic division of the Advertising Department of a large industrial manufacturer. Since most of the photographs taken by our department would be used in company publications, they had to be of the highest quality. And that, for the most part, meant using the largest format cameras available at the time.

More than 90 percent of the shots taken in our “studio” were taken using the 8 x 10 view camera pictured in the center here. I still have one of these cameras, and got it out of it’s case less than one and a half years ago.





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But I'll confess, I didn't take any photos with it. It was on display at our 50th wedding anniversary party... along with other relics of the past, like my 3-D camera shown here on the corner of the table.





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Of course, back in “the day”, if one were going to put on a presentation, one typically had a slide projector (or two) along with countless 35mm Ektachrome or Kodachrome slides. And without a doubt, the quality (depending upon the photography) could be top-notch. But all this slide production could be costly... especially if graphics were used extensively.





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Then, along in the mid-90's came tools like the digital video projector, digital cameras, and program production software like "Power-Point" from Microsoft. The camera shown here on the left was one of the first to be issued by our company to those of us who were involved with producing training programs. It employed a 1.4 Megapixel sensor with a 4X zoom lens, and through-the-lens viewing. A while later, some of the more compact "point-and-shoot" cameras became available, and the technology race was on.



<b>VGA PROJECTION</b>	<b>= 800 X 600</b>	<b>= 0.48 MP</b>
<b>XVGA PROJECTION</b>	<b>= 1024 X 768</b>	<b>= 0.79 MP</b>
<b>HD PROJECTION</b>	<b>= 1920 X 1080</b>	<b>= 2.1 MP</b>
<b>RETINA DISPLAY</b>	<b>= 2048 X 1536</b>	<b>= 3.1 MP</b>

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Now you might be wondering how a camera with only 1.4 Megapixels could ever be useful for serious photography, but let's look at the digital video projectors of the day. The first "VGA" projectors beamed an 800 x 600 image (or about 0.48 MP). That was only about 1/3 of the resolution that our camera of the day had!

Later, "XVGA" came along with a 1024 x 768 image (0.79 MP)... still only 60% of the camera image. And up until fairly recently (about 2 years ago), our club used a projector with this resolution.

Today, we're using this HD projector with a 1920 x 1080 image (2.1 MP). And that's only about 50% greater resolution than that mid-90's (1.4 MP) camera.

Even our amazing "Retina Display" on the newest iPads, iPods and iPhones have an image of not more than 3.1 MP. So it may sometimes beg the question as to why we're so preoccupied with the "pixel" thing. The more the better! Right?



# WORKING WITH THE LIMITATIONS

- **AUTO EVERYTHING?**
- **KEEPING THE IMAGE SHARP**
- **SHADOWS / HIGHLIGHTS  
(keeping a balance)**

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At this point, let's shift gears a bit, and talk about what really matters when it comes to image quality. What are the limitations of Point & Shoot cameras compared to their bigger brothers. Of course, their biggest talking point is that they're fully automatic... focus, exposure, color balance, etc. Is that really always a good thing? Are there challenges in trying to keep the image sharp? Or are there any serious limitations these cameras with regard to their ability to render bright highlights and deep shadows effectively?



# AUTO EVERYTHING?

- SHUTTER SPEED
- APERTURE (lens opening)
- FOCUS
- EVERYTHING ELSE
  - background
  - lighting

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Back in “the day”, nearly nothing was automatic about taking photographs. We had to remember to set the correct shutter speed for our situation, adjust the aperture (lens opening) so that it worked with our shutter speed to give us the correct exposure, then we had to focus the lens accurately. And of course we needed to remember everything else that was pertinent, like “is the film I’m using the correct color balance for daylight or tungsten light”? Note the nifty memory key S - A - F - E. If we remembered to do all the above, then we were “SAFE”!



# CAMERA FACTORS AFFECTING IMAGE QUALITY

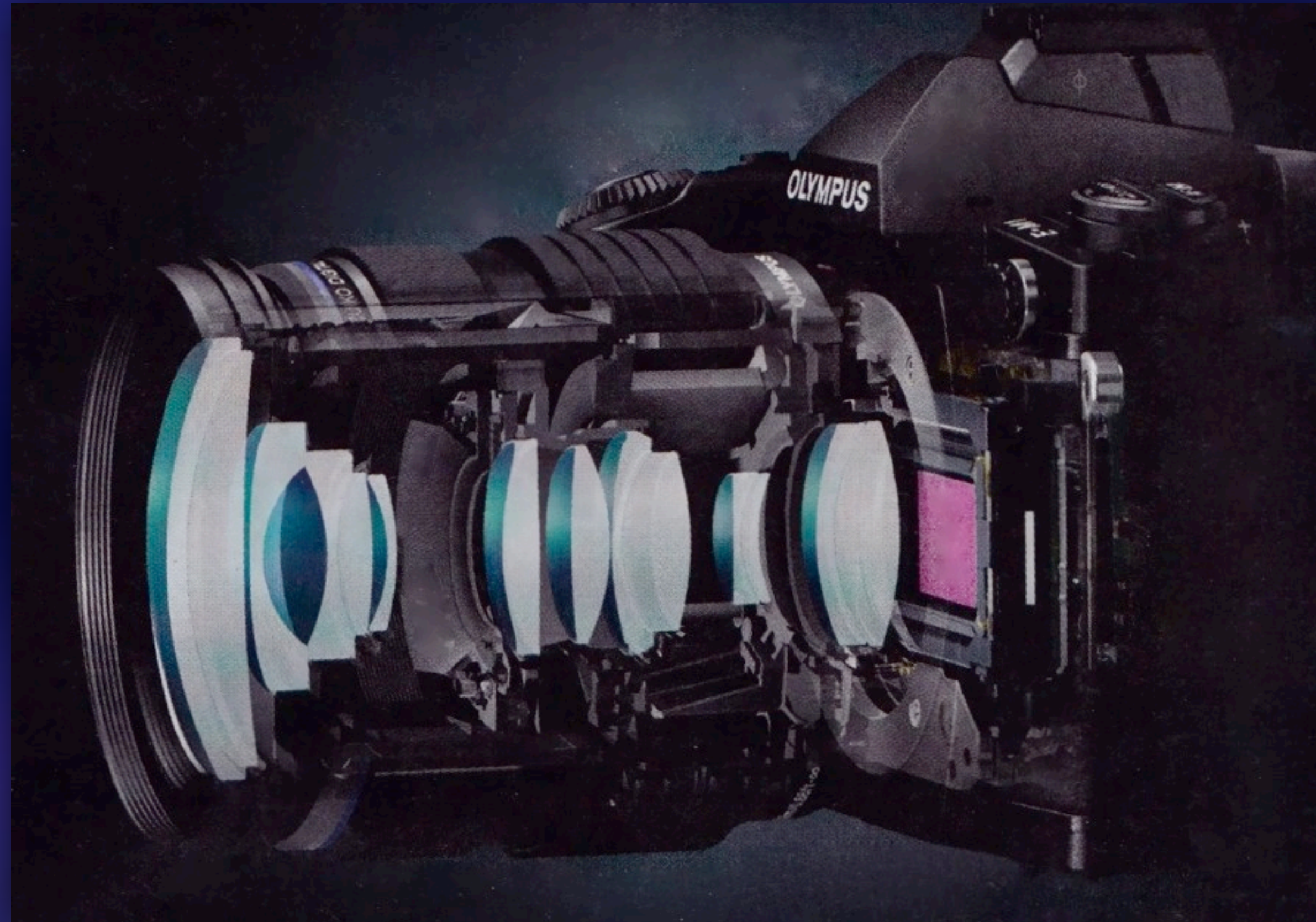
- LENS QUALITY
- IMAGE PROCESSING ABILITY
- IMAGE SENSOR

Wednesday, January 8, 2014

Since our “AUTO-EVERYTHING” cameras today do most of those tasks reasonably effectively (most of the time), we’ll take a look at other factors in these cameras that affect the overall image quality most profoundly... the lens, the image processing ability, and the image sensor.



# THE LENS

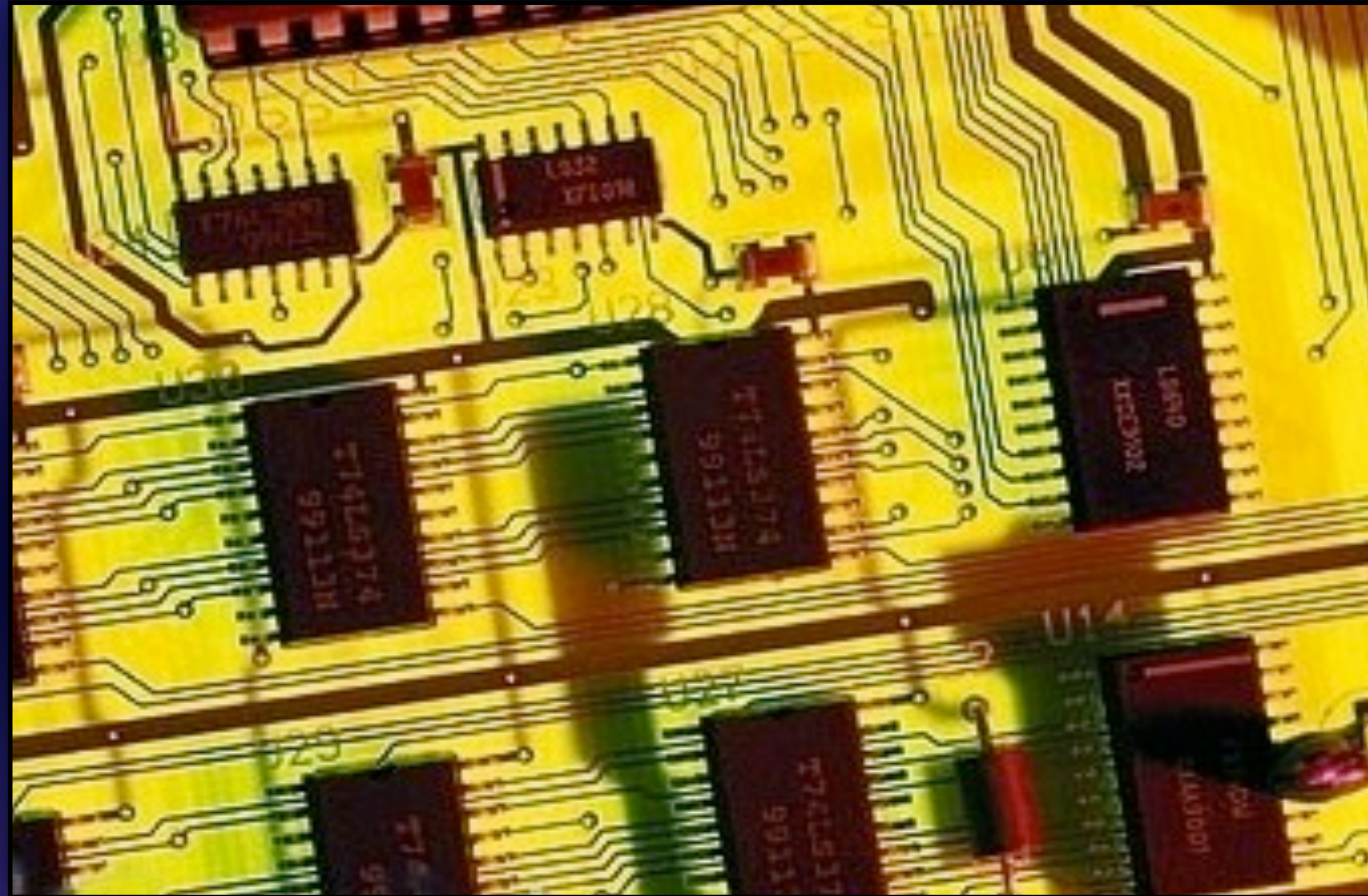


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First, the lens. There is probably nothing more important than the quality of the lens in good picture taking. Most image quality loss begins here. Typically, a high-quality lens has many elements. The one shown here as 16 different lenses that combine and move in groups as the lens is focused and zoomed to maintain the best possible image quality. Obviously the number of lens elements and the quality of the material and/or coating of the lenses is directly proportional to the image that falls upon the image sensor. Most point-and-shoot cameras have far fewer elements than shown here, so compromises are made right off the bat.



# THE IMAGE PROCESSOR

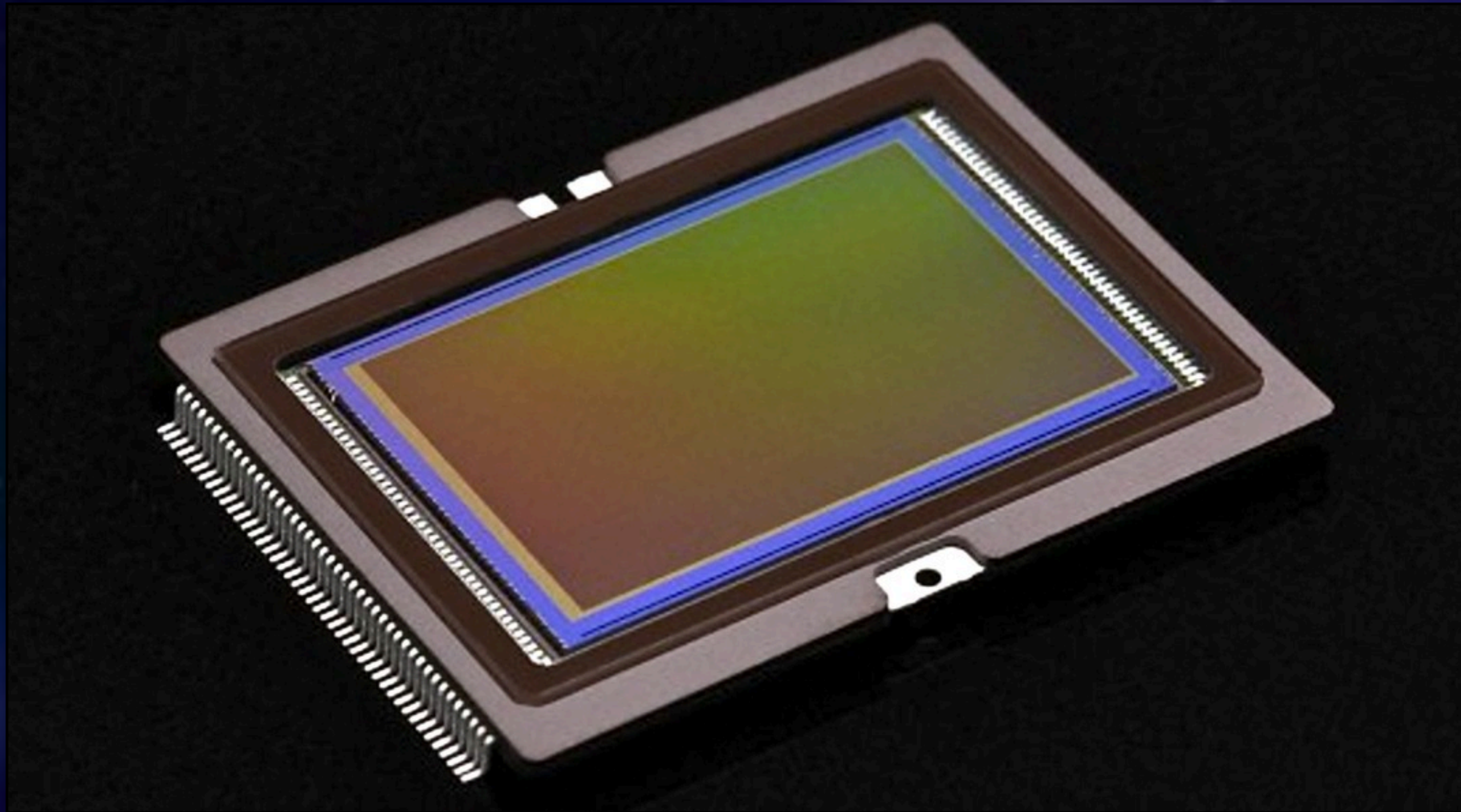


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Manufacturers of digital cameras closely guard their image processing technology secrets. And of course, they all boast that theirs is the “best” technology”. Certainly this part of digital tech has progressed phenomenally, but there are significant differences in what is available from various manufacturers today.



# THE IMAGE SENSOR

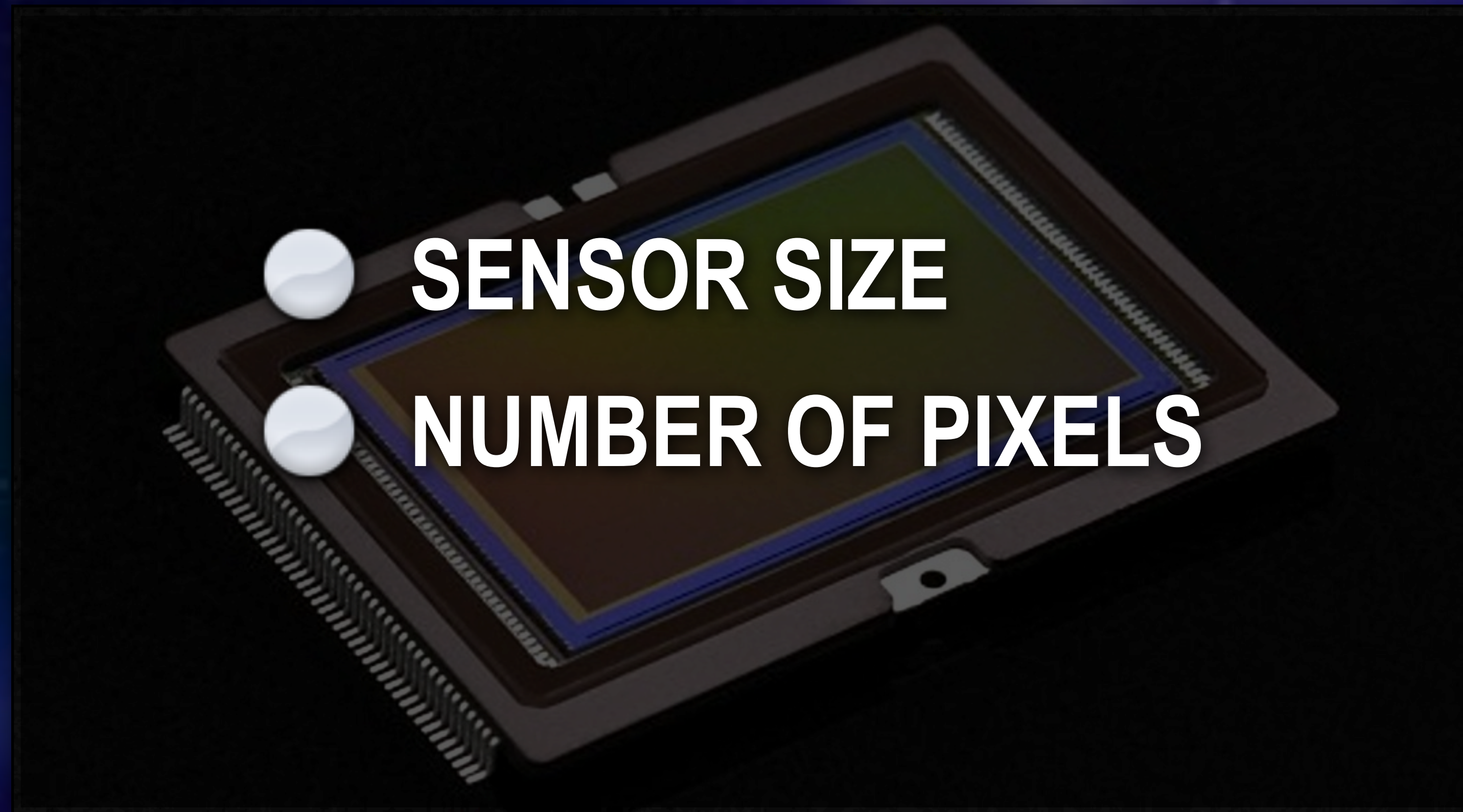


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And finally, there is the image sensor... that piece of the camera that replaces film. What is most significant in today's sensor... this charged coupled device (CCD) made up of millions of tiny pixels, and that is most often described as using something called CMOS (complimentary metal-oxide semi-conductor) technology?



# THE IMAGE SENSOR



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Although we tend to be a bit pre-occupied with the number of pixels in today camera sensors, at least as important, is the sensor size. Let's take a closer look at the typical sensor size used in today's digital world.



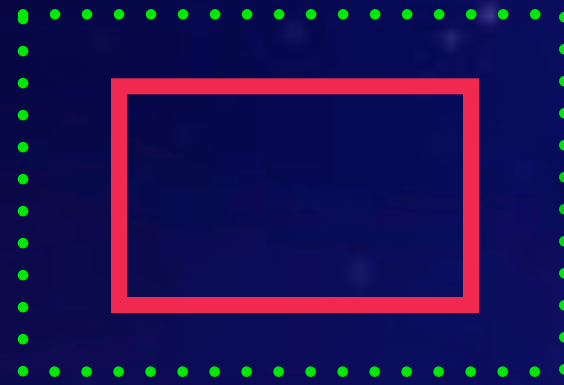
# SENSOR SIZES



36 x 24 mm  
(864 mm<sup>2</sup>)



28.7 x 19 mm  
(548 mm<sup>2</sup>)



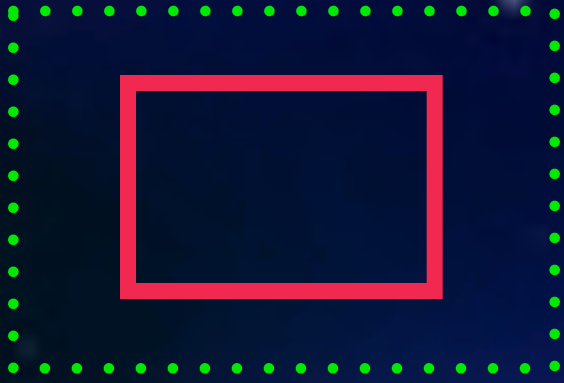
23.6 x 15.7 mm  
(370 mm<sup>2</sup>)



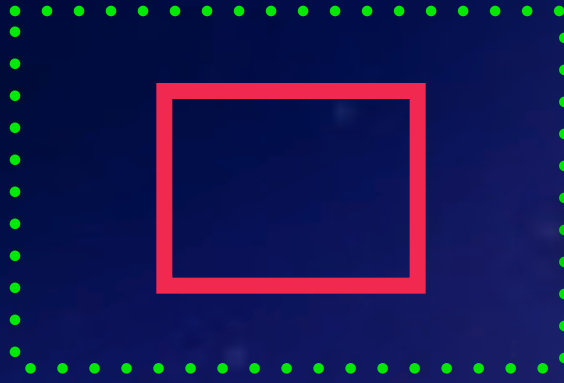
**Very High-End DSLR's**



22.2 x 14.8 mm  
(329 mm<sup>2</sup>)



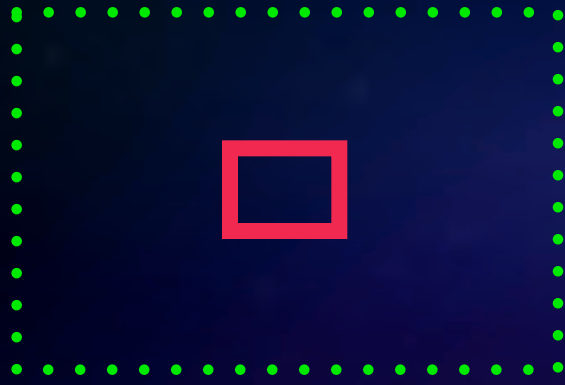
20.7 x 13.8 mm  
(286 mm<sup>2</sup>)



17.3 x 13 mm  
(225 mm<sup>2</sup>)



**Most DSLR's & High-End EVF's**



7.6 x 5.7 mm  
(43 mm<sup>2</sup>)



7.18 x 5.32 mm  
(38 mm<sup>2</sup>)



5.76 x 4.29 mm  
(25 mm<sup>2</sup>)



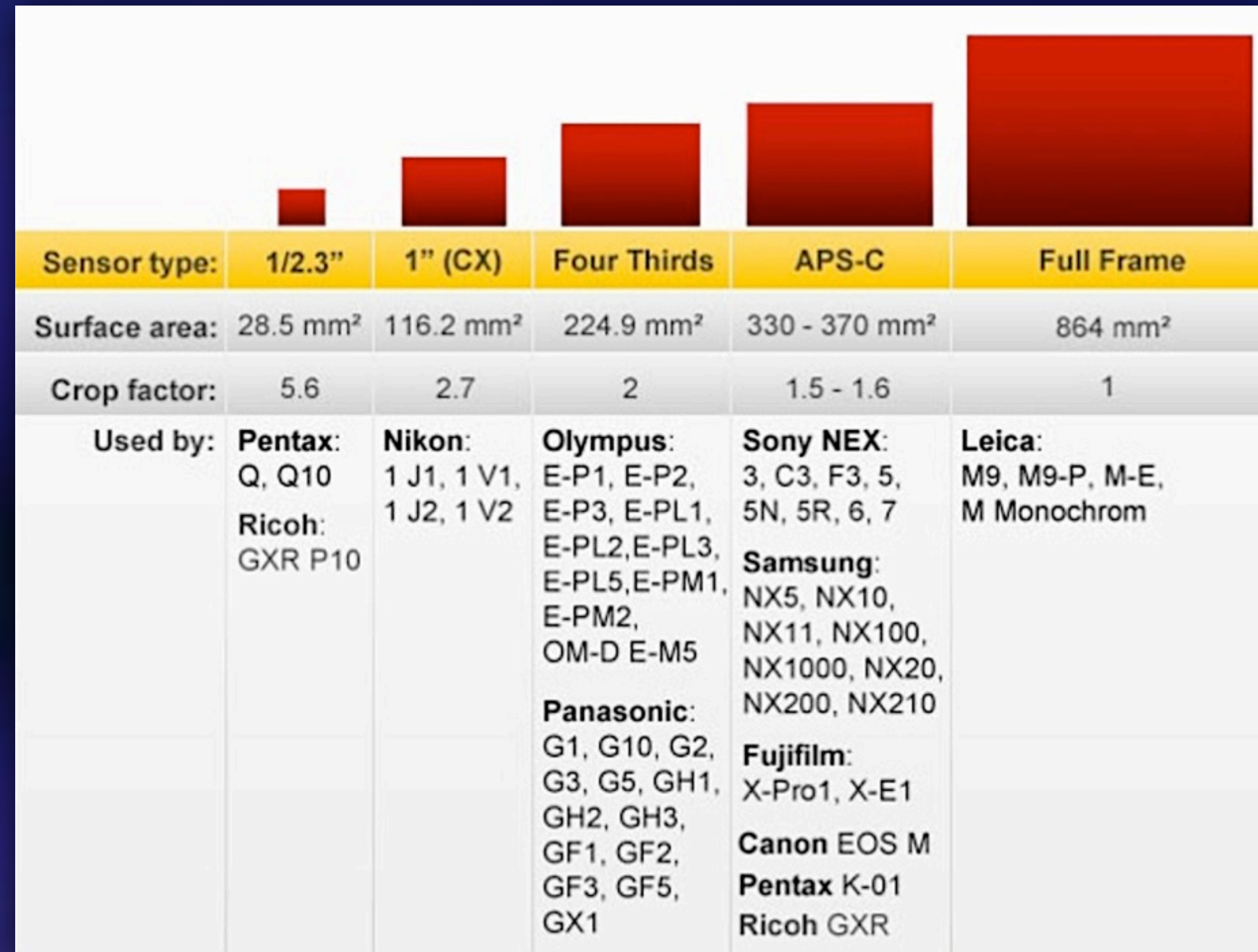
**Most Point & Shoot's**

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The most important thing to note here is that the typical DSLR (digital single-lens reflex) camera has a sensor that is 225 mm<sup>2</sup>. That is about 6 times larger than the typical point-and-shoot camera. Even though they both may have the same number of pixels, that means that the pixels in the point-and-shoot are 1/6 the size (and therefore have 1/6 the light gathering ability) of the larger DSLR sensors. This affects the size of the lens required to give the same focal length or "zoom" range, and dramatically affects the camera's image quality in low-light situations.



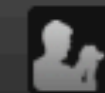
# SENSOR SIZES



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Although this chart reflects only a few of the camera models and makes, it does more clearly show the image sensor size comparison between camera types, and does show at least one model of camera we'll talk about in a moment... the Leica M9.





## Camera and Lens Buying Guides

On this page you'll find links to our extensive buying guide content, which spans everything from seasonal product roundups to advice about what gear is best for what kind of shooting situation. You'll also find link to the most popular cameras and lenses on dpreview, and to our interactive camera chooser, which lets you quickly compare different models to find the right one for you.



**DPReview recommends**

Need to shoot something specific? Our list of situations may help.

- Best cameras for beginners
- Best cameras for social photography
- Best compact cameras for travel
- Best waterproof cameras
- Interchangeable lens cameras for under \$1000
- Best compact cameras for enthusiasts



**Best in class: 2013**

Want to know which camera to buy and why? Check out the following roundups.

- High-end pocketable compact cameras
- Enthusiast compact cameras
- Entry-level mirrorless cameras
- Mid-range mirrorless cameras
- Consumer DSLRs
- Enthusiast interchangeable lens cameras



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**Nikon AF-S Nikkor 58mm f/1.4G review**



**Nikon Df**



**Panasonic Lumix DMC-GM1**



**Entry-level Mirrorless camera roundup 2013**



**Consumer SLR camera roundup 2013**



### MOST POPULAR CAMERAS

Nikon Df	7.1%
Panasonic Lumix DMC-GM1	6.2%
Samsung NX30	5.7%
Olympus OM-D E-M1	3.9%





[Enlarge](#)

## Nikon - D800 Digital SLR Camera (Body Only) - Black

Model: 25480 | SKU: 4827167 |  
Customer Rating: ★★★★★ 4.8 (70 customer reviews)

New from  
**Sale: \$2,799.99**  
Refurbished from  
\$2,399.00

**LOW PRICE GUARANTEE**

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**Store Pickup:** Available at most stores

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### Leica M9-P 18MP Full-Frame Digital Rangefinder Camera (Silver Chrome)

by [Leica](#)

★★★★★ ▾ 1 customer review | 4 answered questions

Price: **\$7,995.00** & **FREE Shipping**. [Details](#)

**Only 4 left in stock (more on the way).**

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The camera shown here is the “ultimate” in image quality in a 35mm size digital camera... not because of the “full-frame” 18MP image sensor, but because of the **lens**. Leica has been making cameras and lenses for nearly a century, and are recognized as the best in lens quality. Note that the lens on this camera is NOT a zoom lens. It is a “normal” fixed focal length lens (50mm) on a range-finder (not SLR) type camera. This mimics the look and feel of the famous Leica 35mm camera... the world standard in image quality.



10 MP



ZS3

14 MP



ZS8

Wednesday, January 8, 2014

Today we're going to feature photos taken with a Panasonic Lumix point-and-shoot. Note the brand name on the lens of this camera. It was the lens that impressed me the most about this point and shoot. Although Panasonic actually makes the lenses for these cameras, they must maintain the quality standards established by Leica in order to use their name on the lens. I own a 12MP version that is between the two models shown here. The camera at left sell for less than \$120. The camera at right... a little over \$200 at this time.





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Of course camera phones are a point-and-shoot version. And they have evolved dramatically from their earliest version. This Motorola Razor of mine (3 phones ago) had a 1MP camera with a fairly poor lens.





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Today's smartphones have cameras with real glass magnesium fluoride coated lenses and image sensors with 8MP and higher. They're capable of capturing quality images and even reasonably HD video. And best of all, most of us carry them with us much of the time!





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But in the next few slides, I'm going to feature photos taken with this camera... just to give you an idea of how far we've come in the point and shoot world of photography.





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The following photos were taken by club members Jack & Doris on a recent Safari taken in Kenya. Note Jack has the camera camera case he used for his Lumix here on his belt. An HD camera doesn't get much more compact than this.





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They took literally hundreds of high quality photos on their trip, and I found it very difficult to select only a couple dozen to show you. And in the interest of time, the pictures are going to be on the screen very briefly, so please watch closely as we look at the images of Africa!





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Without a doubt, the images that they captured were extraordinary, and would not have been possible with simply a smartphone camera (for obvious reasons). They demonstrate that a lightweight, easy-to-carry point-and-shoot camera can do an amazing job with a little patience and a little practice.



How can I get the best possible photos with my point-&-shoot?

What are the most common problem areas?



- ★ Camera movement
- ★ Out-of-focus
- ★ Poor lighting



# CAMERA MOVEMENT



Wednesday, January 8, 2014

The most common cause of “fuzzy” photos (barely edging out poor focus) is camera movement. And most often this is caused by the way we press the shutter button.



# CAMERA MOVEMENT

- ★ Use anti-shake function
- ★ Use “sports/action” mode
- ★ Get more light (if possible)



Wednesday, January 8, 2014

So, what can we do about the camera movement problem. For one, most camera's today feature an “anti-shake” mode that can be turned on (often the default setting) to help eliminate some of the camera “jiggle” issues. But it comes with a trade-off, since it utilizes only about 2/3 of the sensor area as it moves the image about on the sensor to “stabilize” it. That means that your making your image sensing area even smaller than it could be! In low light, this can be very significant.

The “sports/action” mode forces the camera to use a higher shutter speed than it might otherwise use, and this will help ensure a sharper image.



# CAMERA MOVEMENT

★ USE A POCKET TRIPOD



Wednesday, January 8, 2014

This pocket tripod by a company called “Square Jellyfish” allows you to carry the ultimate stabilizer in your pocket. The optional micro ball head allows you to mount heavier cameras to the “pod” if desired.



# OUT - OF - FOCUS

Wednesday, January 8, 2014

The most common reason for out-of-focus images is because we get in a hurry. Most typical point-and-shoots take about a second (once the shutter button is pressed **half-way**) to send out a light beam, determine the distance of the subject, and send a pulse to the servo motors that control the focus drive to move the lens elements to a position that will bring the image into sharp focus. If we don't allow enough time for this auto-focus system to do what it needs to do, we get a picture that looks like this...



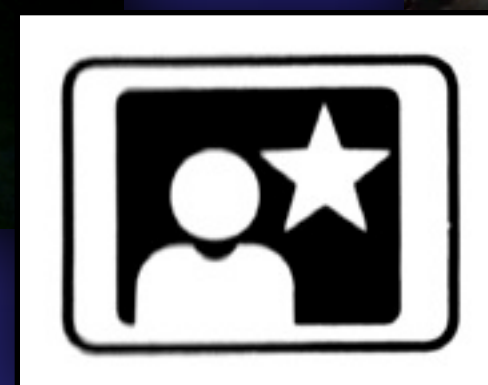
# OUT - OF - FOCUS

Wednesday, January 8, 2014

Instead of this! Pre-focusing before that all-important action shot allows the camera to do its thing.



# POOR LIGHTING



Wednesday, January 8, 2014

Flash pictures often have poor lighting (foreground too light... background too dark). Most point-and-shoots have a night portrait setting, but to do that right, the book recommends a tripod. And that sort of defeats the idea of having a point-and-shoot. Yet unquestionably that will produce a much better effect. But to be honest, here I used iPhoto to “clean-up” this poorly lit photo. And we’ll be discussing that incredible program in more detail at our next meeting.



# POOR LIGHTING



Wednesday, January 8, 2014

In general, it's safe to say that I hate to use "flash" in my photos. The photo at left, flash... the photo on the right, available light. But available light shots can be problematic in low light. So how do we get around the camera-movement issues?





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First, turn off the flash. On this camera that's accomplished by bringing up the "flash" menu using the flash button shown at right. Then select "FLASH OFF".

Second, use the menu button to select the "sports" mode. This will force the camera to use a higher shutter speed and compensate for low light by changing the image sensor ISO (light sensitivity) setting.





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Then take a few “trial & error” sample shots using the exposure increase-decrease feature to get the optimum image.





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If you do that, then you can get an available light shot like this one I took at a Christmas performance. Since we were seated near the back of the theater, the shot would have been impossible using flash.





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To maintain the “look” of the sunset, and keep the AUTO EVERYTHING camera from trying to correct the color balance of this sunset, use the SUNSET scene mode from the menu of possible setting modes. Icon shown at upper left.





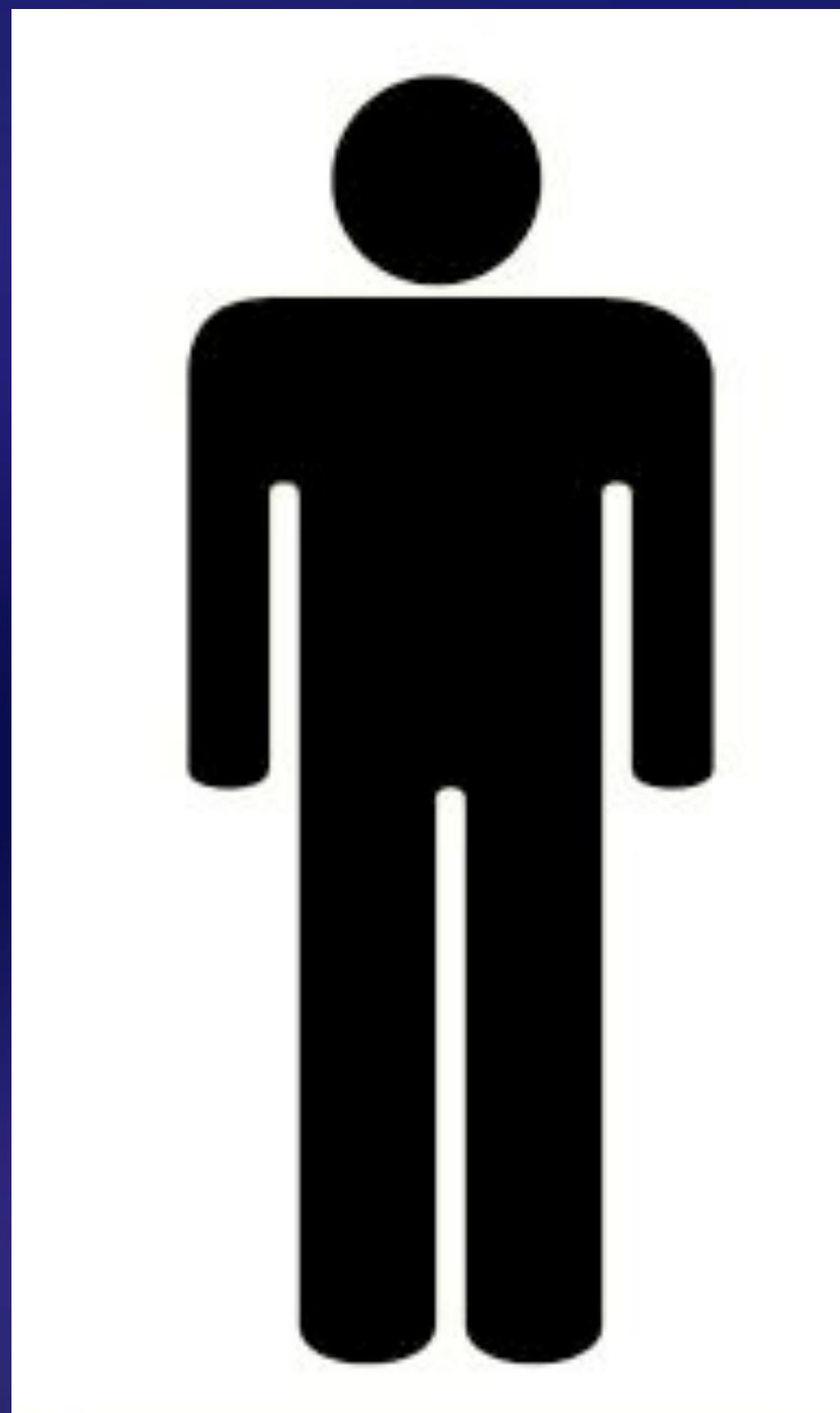
Wednesday, January 8, 2014

It's true that sometimes all these universally standard icons used in the various camera menus can be a bit confusing, (at least not as confusing as this sign). But if you'll just refer to your operating instructions (well before you need to) you'll have an idea of what your camera can do.

I've noticed (of late) a new series of internationally accepted icons that I thought I'd share with you. Perhaps you may have seen some of them.



# RESTROOM SYMBOLS





# RESTROOM SYMBOLS



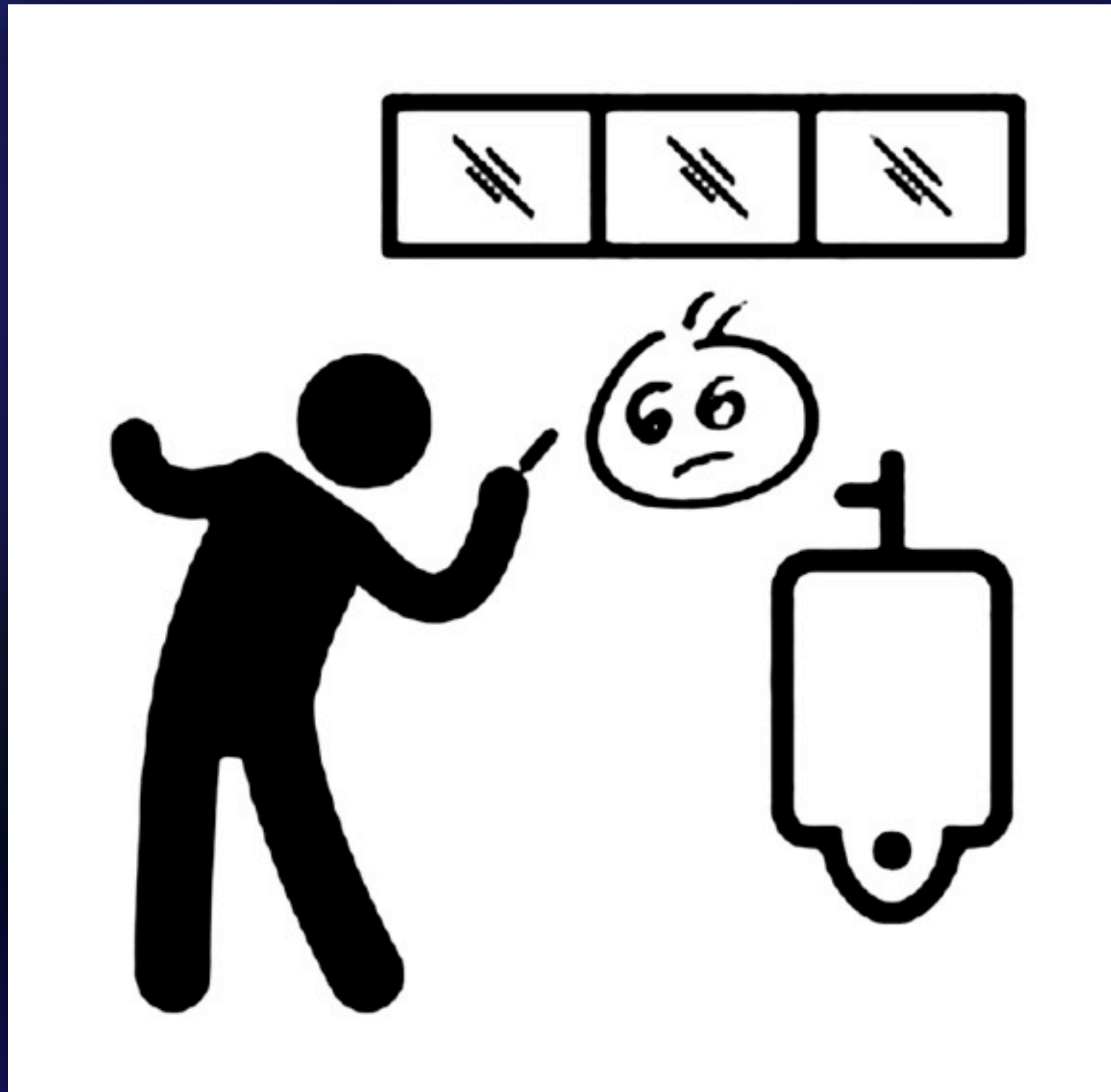
**UNISEX RESTROOM**



**ELDERLY MENS RESTROOM**



# RESTROOM SYMBOLS



**ARTISTS RESTROOM**



**VOYEUR RESTROOM**



# WARNING SYMBOLS & SIGNS



**MAYBE YOU SHOULDN'T EAT HERE**



# WARNING SYMBOLS & SIGNS



**MAYBE YOU SHOULDN'T PARK HERE**





Wednesday, January 8, 2014

Although in Old Town Kissimmee you'll find T-shirts bearing this new international symbol for "**Marriage**", I would suggest that wearing it might not personally enhance your marriage experience... particularly if you're a guy!





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You probably won't find some of the symbols you've just seen on your camera, but for those symbols that you do find on your point-and-shoot camera menu screens, refer to your operating instructions for what they mean, and how utilizing the features that they launch will enhance your photo experience.





Wednesday, January 8, 2014

Anyway, back to our discussion of how to capture those truly high-quality images. There can be no substitute for the larger image sensors (and hence, larger lenses) found in today's digital SLR's. And as a side benefit, you can build up your biceps. This 10X zoom that Keith is shown using here is the ultimate in capturing wildlife photos... especially in low light.





Wednesday, January 8, 2014

You can find Keith's award winning photos displayed throughout Keith & Doreen's home... and also in the Cove's camera club contests. If you need any advice on printing and framing your favorite images, visit with Keith.



# EVF's



**SX50 HS**



**S8200**

Wednesday, January 8, 2014

And now a final word on those EVF (electronic view finder cameras). There are some with interchangeable lenses that equal the quality available in DSLR's. And then there are some (like those shown here) that have permanently incorporated zoom lenses with incredible zoom ranges. They are fairly light weight and feature a host of pro features. The drawback... they have a much smaller sensor than a true DSLR.



**Next Meeting,  
we'll do some magic!**

**Featuring...  
iPhoto  
(& other inexpensive  
programs)**



Wednesday, January 8, 2014

Next meeting, we'll show you some ways to take those mediocre photos and make them look a whole lot better. We'll demo some iPhoto techniques and talk about some of the other programs out there that allow you to do nothing short of MAGIC!