

Jim Zuckerman's

PHOTO INSIGHTS

March 2026

A photograph of two people in elaborate Venetian costumes standing in front of a green door. The costumes are black and green with red accents and large, ornate hats. The background is a stone wall with a green door.

White Balance: Whats the best setting
Chemical Crystals
Exposing for silhouettes
Photography Quiz
Photo Tours
Ask Jim
Student Showcase
The Story Behind the Picture
Back issues



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On the cover: Costumed models in front of a medieval, gothic door in Venice, Italy, during carnival. *On this page:* A wild orangutan smiling for the camera in Indonesia's portion of Borneo.



Reality checks put things in perspective at times. The next time you complain about how expensive lenses are and how heavy they are to carry, let me give you a sense of scale. I did some research online and found truly outrageous lenses and price tags.

Let's start with the Sigma 200-500mm f/2.8 telephoto. It costs \$26,000 and weighs 34.6 pounds (15.7 kilograms). It comes with a workout guide for developing your biceps. At such an affordable price, you might consider getting two of them -- one as a backup, just in case.

A lens that's perfect for sports, wildlife, and photographing aliens on Neptune is Canon's 5200mm f/14 mirror lens. It weighs in at 220 pounds, and its minimum focusing distance is 400 feet. A few years ago it was offered on eBay for \$45,000, but no one bought it. It's hard to understand passing up such a deal.

For those of you who shoot Hasselblad, you might want to give yourself a present for your next birthday and buy the Zeiss Apo Sonnar T 1700mm f/4 for only \$100,000. It's well worth the price . . . after all, you get what you pay for. But you'll have to buy a crane as well because it weighs 564 pounds (256 kilos), and I doubt the lens fits into the overhead compartment on any commercial aircraft known to mankind.

For you Nikon shooters, the Nikkor 6mm fisheye is a must have. It covers an astonishing 220 degrees and is a no-brainer at \$160,000. It only weighs 11.4 pounds. You could be the first on your block to own one.

Leica has certainly stepped up to the plate with its 1600mm f/5.6 telephoto. It's only \$2,000,000. It was made specifically for a Sheikh in Qatar, so it's a one-off. If you were lusting after this lens, I'm sorry, but as far as I know, it's not for sale at this time.

To make you feel little and insignificant when you look at the contents of your camera backpack, Zeiss made the 50mm Planar f/0.7. This is one of the largest apertures in the history of photography, and Zeiss sold six of these lenses to Nasa for a cool \$23,100,000 each. If you have to have one of these lenses, I would definitely recommend adding it to your homeowner's insurance policy.

Jim Zuckerman
photos@jimzuckerman.com
www.jimzuckerman.com

WHITE BALANCE

What's the best setting?

Most of my clients who travel with me on photography tours set their white balance to *auto*. I disagree with this choice and here's why.

When you are shooting in the middle of the day, roughly from 10am to 4pm, there is no difference between using auto white balance or daylight white balance (*daylight*, *sunny*, and *direct sun* are all the same -- various camera manufacturers use different names for the same thing). The colors in your pictures will be identical.

When the sun is close to the horizon at sunrise and sunset, the color of the light is golden. Specifically, it is red and yellow. When you set the camera's white balance to *daylight*, the colors in the photographs will be exactly what you see. The winter shot of the Grand Tetons in Wyoming, below, is an example. The golden color on the mountains in the photograph is exactly what I saw when I was standing there taking the picture.

If the camera's white balance is set to *auto*, the



algorithm is programmed to "correct" the color of the light. That means auto white balance eliminates the beautiful golden tones of the low angled sunlight and makes it white. The image below shows how the AWB eliminated the golden color we photographers love and turned it into white light.

Assuming you are shooting in RAW mode, the sunset color can be recovered in Lightroom or ACR by manipulating the *Color temperature* slider. But if you are taking many pictures of a beautiful sunrise or sunset, that means you would have to do that to all your shots. Why go through the trouble?

This is why I leave my camera on daylight white balance all the time. There are three situations in which I use another setting.

1. When shooting indoors with tungsten (i.e. incandescent) lighting, I use the white balance setting designed to produce accurate color with this type of light. I'm referring to the traditional lightbulbs that we all grew up with in our homes. Various camera manufacturers give this white balance setting different names -- it will be either indoors, tungsten, incandescent, or possibly 3200K.

2. Some indoor lighting scenarios use lights that are quite reddish. On the Kelvin temperature scale, daylight is 5500 degrees K; household incandescent bulbs are 3200K; and some venues like theaters use bulbs that are 2500K or even less. In these situations, I switch to manual white balance and choose 2500K which is usually the lowest number available.



The picture below of La Fenice Theater in Venice, Italy, is an example of using 2500K. The lights photographed as red/yellow even when using tungsten white balance at 3200K. Manually choosing 2500K produced colors that were more accurate.

3. The third scenario when I don't use daylight white balance is when pho-



tographing Fluorescent lights and all of the new LED lights that are on the market now. Many of these light fixtures are imbued with various types of colors to make them warmer, cooler, or something else. The traditional white balance calibration system was not made for these 'funky' colors.

The only sensible approach is -- in this case -- to use auto white balance. You won't really know exactly how the camera will interpret a particular fluorescent fixture or some off-color bulb, but in post-processing it's easy to manipulate individual colors. You can do this in Lightroom and Adobe Camera Raw as well as in Photoshop. You can tweak the colors to reflect what you saw, or you are able to create any type of fantasy by using wild and crazy colors.

Most people think AWB produces the best color in all situations. It doesn't. Don't let the camera think for you. You're in charge. \$

Photographing CHEMICAL CRYSTALS

One of the reasons I love photography is because it can lead you down so many paths that you may never have explored but for the passion of capturing wonderful images. One such path I've enjoyed experimenting with is the remarkable art in crystals, specifically the crystalline abstracts that form with certain types of chemicals.

The chemicals that produce the colors you see in this article are called *birefringent*. That means when the crystals are viewed through two polarizing filters they become ablaze

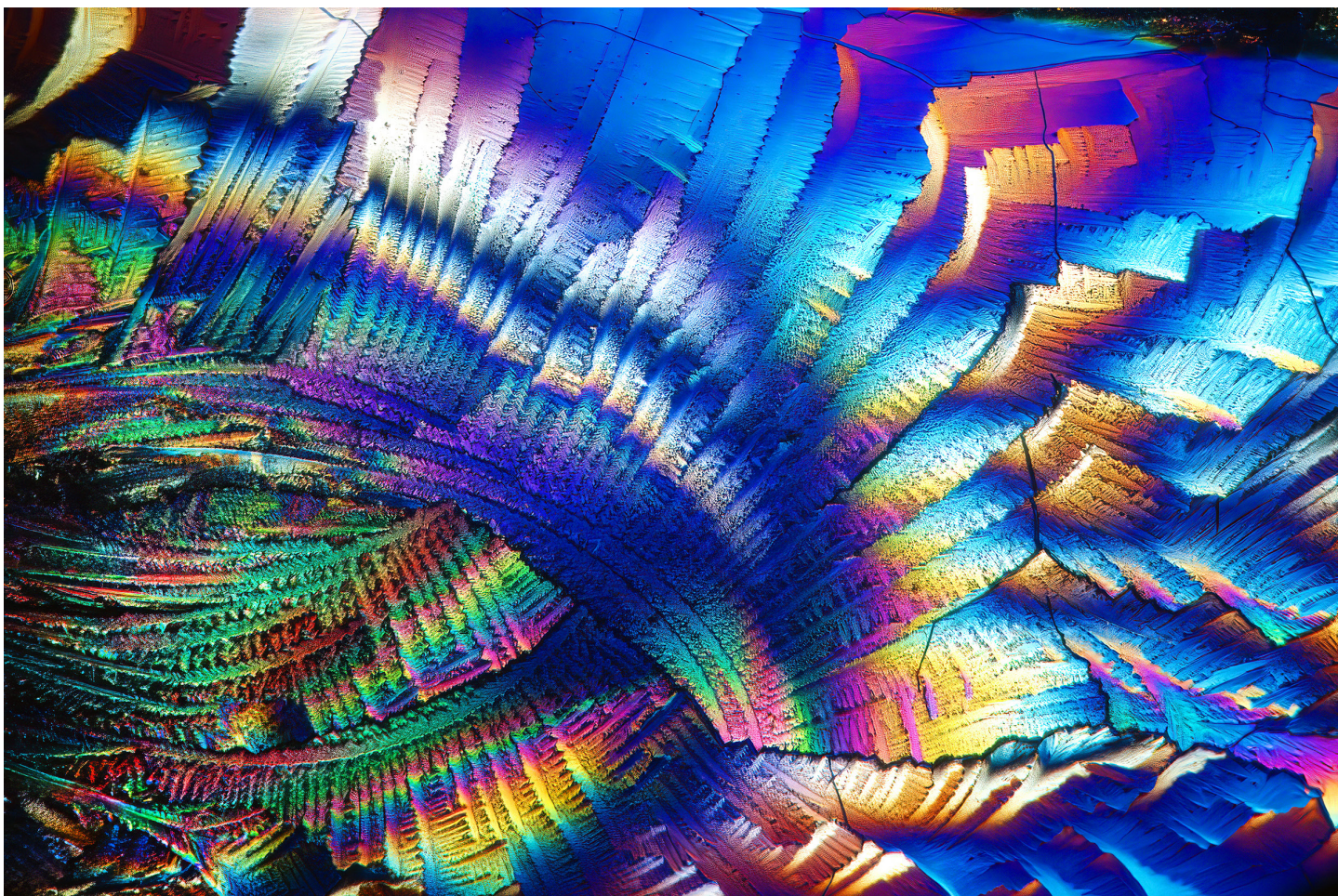
with color. One filter is placed on the camera lens and a piece of polarizing plastic (available from Edmund Scientific) is placed in front of the light source. The crystals have to be backlit.

Examples of birefringent chemicals I used in this article are adipic acid, hippuric acid, epsom salts, moth balls, resorcinol, photographic fixer, and ascorbic acid (vitamin C). The picture below is a picture of ascorbic acid crystals.

There are two ways to photograph these crystals. If the crystals are large enough when they form, you can use a macro lens with extension tubes.



Ascorbic acid 60X



Adipic acid 60X

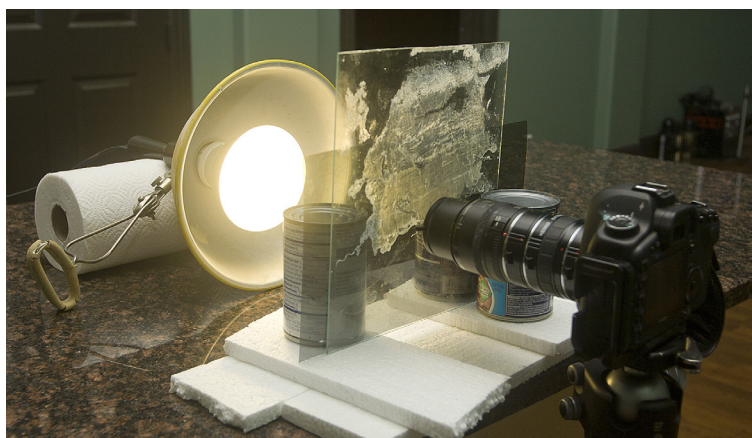
The more extension tubes you use, the greater the magnification. The crystals are quite small, so you will need significant magnification.

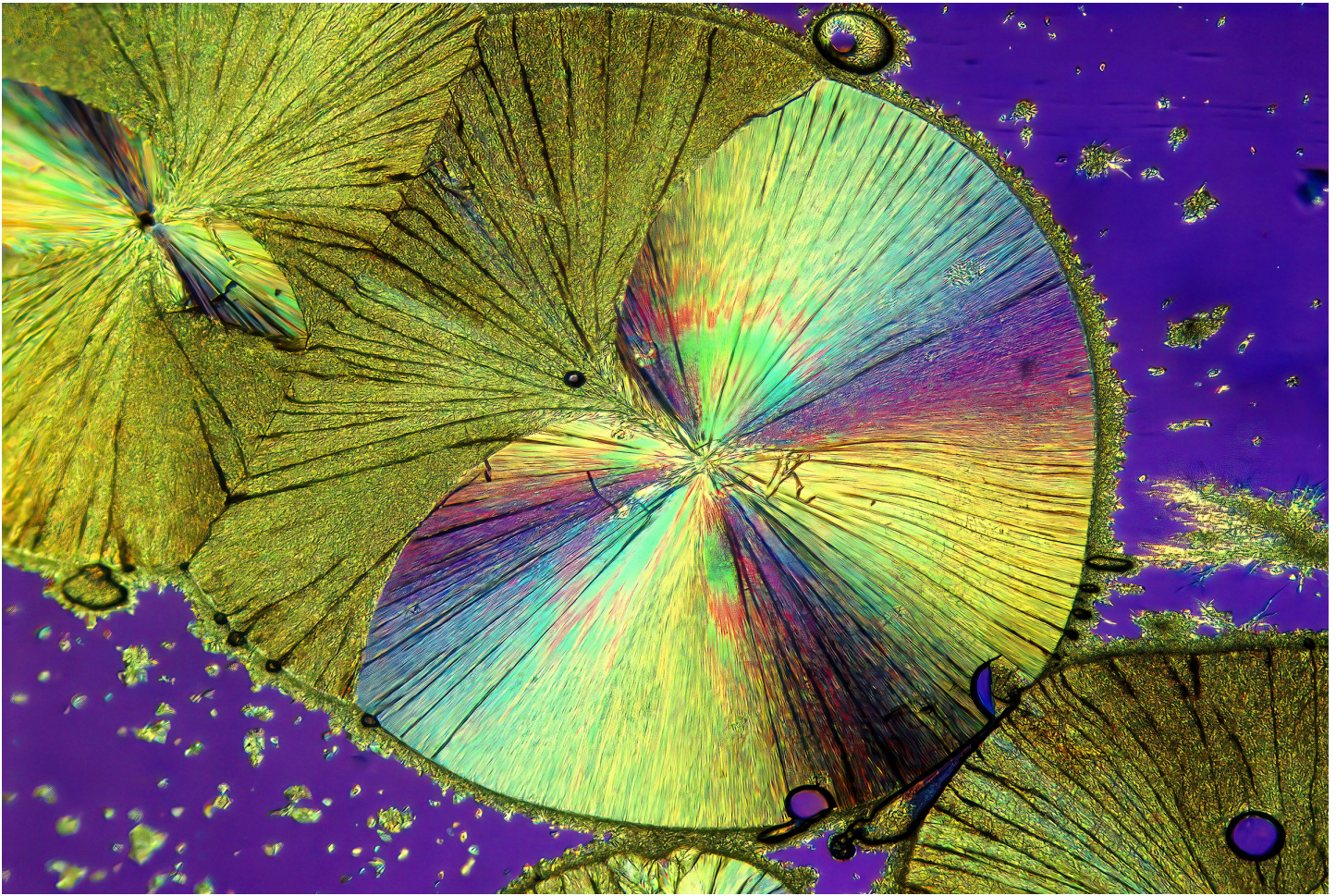
The picture at lower right shows my setup for epsom salts (I'll explain how to prepare the chemicals shortly). I smeared the chemical on a piece of glass about 12 inches square, supported the glass in a vertical position with 3 soup cans (silly, but it worked), and placed a photoflood behind the glass. The camera was on a sturdy tripod.

If you look closely you can see the sheet of polarizing material between the photoflood and the glass. I just leaned it up against the glass. On the front of the macro lens I used a screw-in polarizing filter.

For maximum depth of field, the back of the camera, i.e., the plane of the digital sensor, must be as parallel as possible to the plane of the glass. The crystal picture at the bottom right on the next page is what I got with this setup.

The second way to photograph crystals is with a microscope. I bought an inexpensive trinocular model from AmScope for \$315. You have to





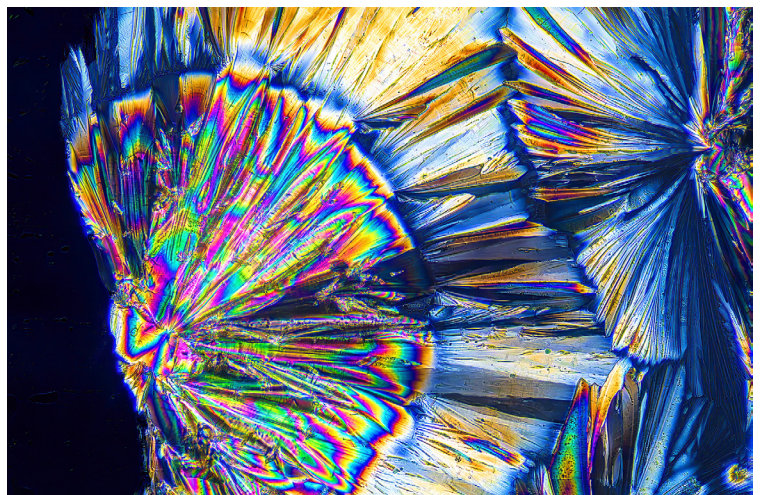
Hippuric acid 60X

have a trinocular scope because that gives you two oculars to see and compose the crystals and one ocular for your camera.

source for backlighting the crystals, and it also comes with several objectives (lenses) for more magification choices.

The big advantage of using a microscope is magnification. As I said, the crystals are quite small. My standard magnification is 60X. The microscope has a built-in light-

When you buy the scope, indicate to the seller what camera body you have so they can include the specific adapter needed to connect the camera to the third ocular.



Chemical preparation

Products like epsom salts and moth balls are available in grocery stores. Photographic fixer, the type used to develop black and white prints in the darkroom, is still available through outlets like B&H and Adorama.

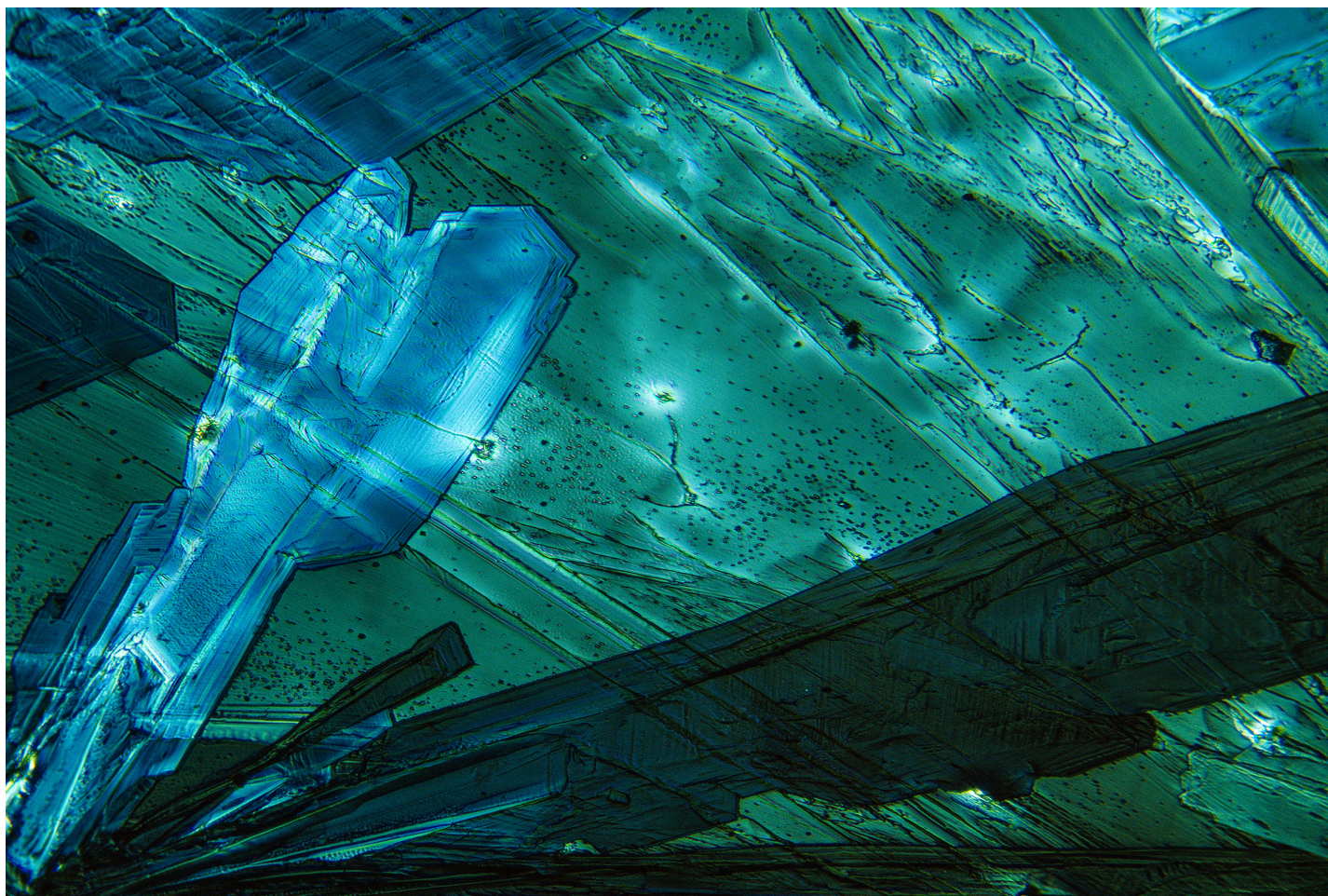
The other chemicals I use are available through various chemical supply companies you can find online. Two examples are TCI American and Fisher Scientific. You can also find suppliers on eBay. You only need very small quantities. Each of these chemicals should cost just a few dollars.

You will also need to buy a box of glass microscope slides. Edmund Scientific and Amazon are good sources for these.

The chemicals come in powder form. To prepare the microscope specimens, dissolve a small amount of the chemical in warm water. When fully dissolved, take an eye dropper and apply the chemical-imbued water onto a glass microscope slide. Let the water evaporate completely for a few hours, and now the crystals are ready to be seen and photographed.

Place the slide in the microscope, turn on the built-in lightsource, adjust the white balance to match the light, put the polarizers in place, and choose the best objective for the composition you want.

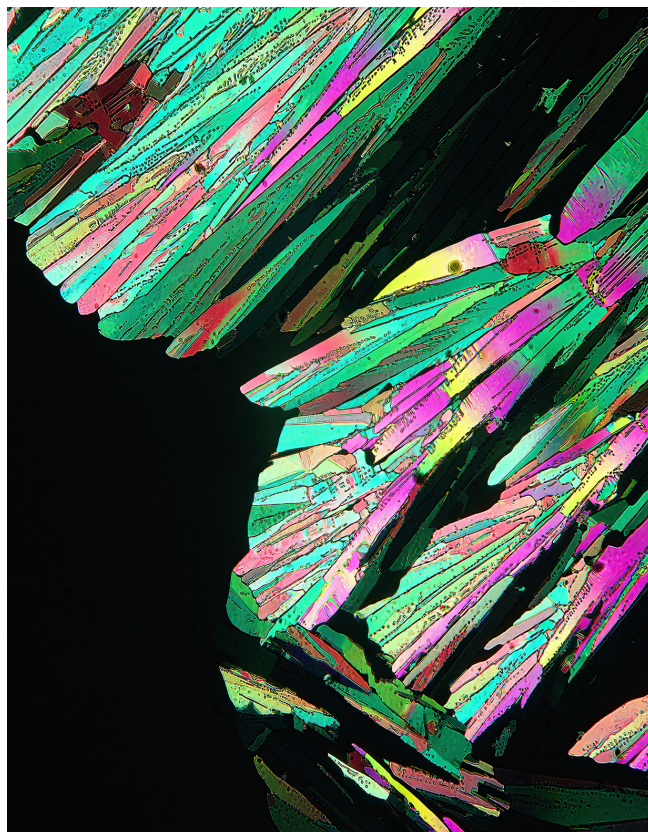
Because the magnification is high, there can be absolutely no movement in the camera when the picture is taken. Use the self-timer in the camera on the 10 seconds option.



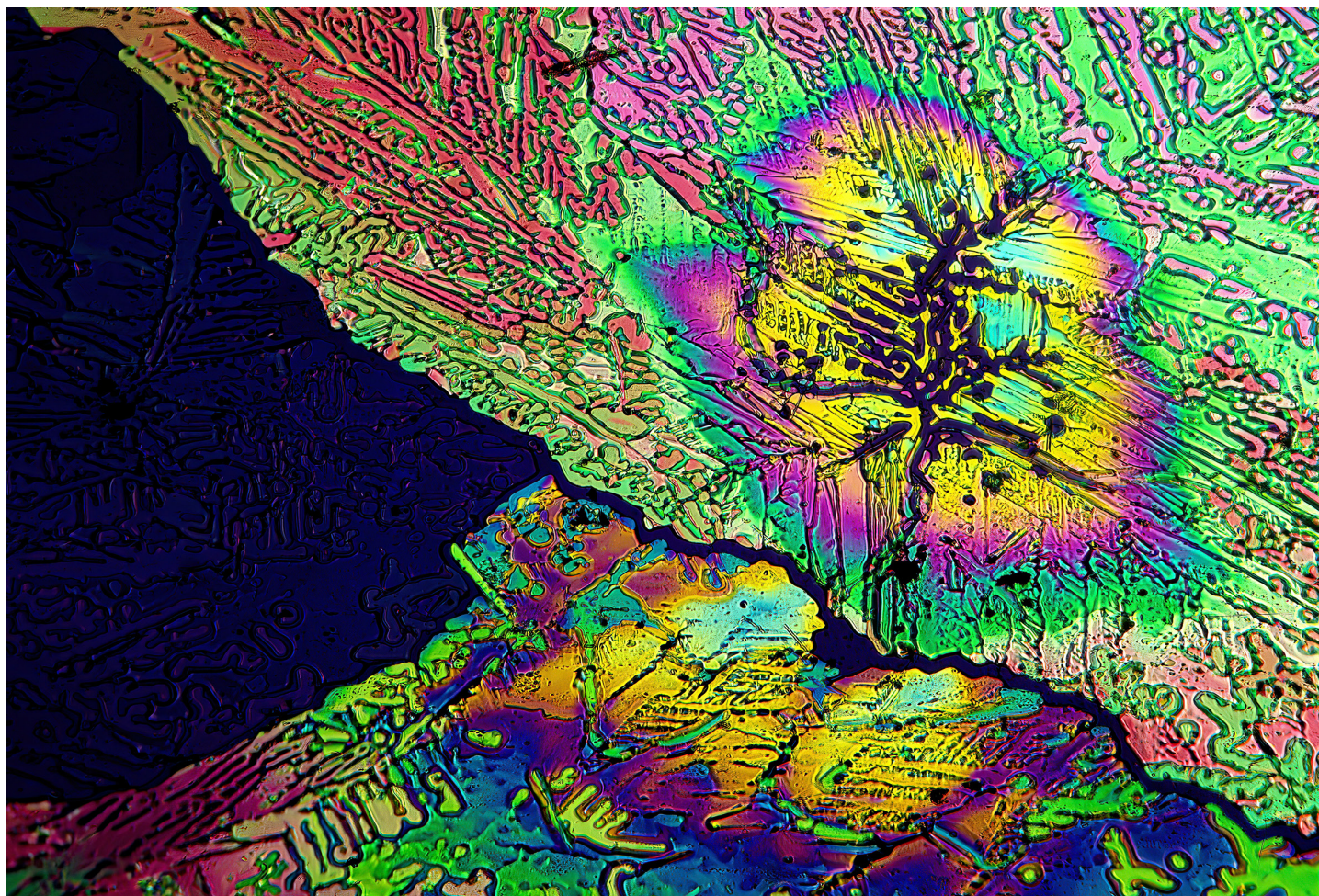
Resorcinol 60X

By rotating either of the polarizers, the colors in the crystals change dramatically. It's fun to watch. The controls on the microscope allow you to move the glass slide so you can look for various compositions.

Exposure is controlled by the shutter speed and the ISO. You can't control the aperture because you removed the camera lens. Choose manual exposure mode. To fit the camera to the microscope's ocular, attach the adapter you purchased as part of the microscope package to the camera body, and that inserts into the appropriate tube in the trinocular head. The camera will be positioned such that the plane of the digital sensor is exactly parallel with the microscope slide. This gives you complete depth of field even without a lens aperture involved. §



Adipic acid 60X



Moth balls 60X

Iceland Drone Tour

August 24 - September 2, 2026



EXPOSING FOR SILHOUETTES

When we all shot film, exposure was the most insecure aspect of photography. Very contrasty situations like back-lighting, rim lighting, sidelighting, and transillumination gave photographers headaches. Usually bracketing was the solution because we couldn't see how the exposures turned out until the film was developed.

Cameras are programmed to understand and interpret middle tones, which we call 'middle gray'. When areas of the composition are very bright and others are very dark, in-camera meters try to average them together to come up with some kind of compromise exposure. That process still goes on in dSLR

and mirrorless cameras, but now we can see exactly what we're getting in the moment. There's no more guesswork.

When we are faced with a silhouetted subject, the first exposure is the camera's *educated guess*. It will be based on what percentage of the frame is dark versus how much is light, and how close to the center of the frame these tones are because meters take most of their information from the center of the frame. Since we can instantly see the results, it's a simple matter to lighten or darken the image and then try again. It's so easy today.

As a result, the second or third attempt will be what you want. A perfect exposure. §



Frog and Reptile Workshop

June 13 - 14, 2026



Exotic Birds of Colombia

Sept. 23 to Oct. 3, 2026



The Pantanal, Brazil

Nov. 23 - Dec. 2, 2026



Photography Quiz

1. When you photograph snow, the camera's meter will typically:
 - a. Overexpose the pictures
 - b. Underexpose the pictures
 - c. Cause the histogram to spike on the right
 - d. Cause the histogram to spike on the left
2. Film speed numbers in ASA and ISO are identical.
 - a. True
 - b. False
3. When an area of a photo is blown out, i.e., it is solid white, you can recover the lost detail by using the burn tool in Photoshop.
 - a. True
 - b. False
4. When a neutral density filter is used, there is typically a slight blue color introduced to the images.
 - a. True
 - b. False
5. You can freeze the wings of a hummingbird with a shutter speed of 1/3200.
 - a. True
 - b. False
6. If you are shooting the Milky Way with a 14mm wide angle lens, the longest shutter speed you can use before star trails appear is:
 - a. 5 seconds
 - b. 15 seconds
 - c. 30 seconds
 - d. 60 seconds
7. What is the advantage of a large format camera over a 35mm camera?
 - a. The large format camera is inherently sharper
 - b. The large format image is enlarged less times to fill the same area
 - c. The large format camera has more depth of field
 - d. The large format camera is simpler to use.
8. A ring flash provides diffused light on a macro subject and it simulates light from a cloud cover.
 - a. True
 - b. False
9. In black and white photography, which two color filters are used to darken the sky?
 - a. Red and yellow
 - b. Green and blue
 - c. Blue and red
 - d. ND and green
10. Which type of lighting increases texture?
 - a. Window light
 - b. Backlighting
 - c. Rim lighting
 - d. Sidelighting

Answers on page 50

UPCOMING PHOTO WORKSHOPS



FROG & REPTILE WORKSHOP in Kansas City

This is an exciting macro workshop in which you will be able to photograph about 40 species of colorful dart frogs and exotic reptiles. Held in a hotel conference room, Jim sets up natural backgrounds for outstanding photos. The photo at left shows a Jackson chameleon with the background replaced in Photoshop.

June 13 - 14, 2026



GREAT GRAY OWLS, CANADA

Get up close and personal with these spectacular birds flying with their magnificent wing spans. The slow flying owls are easy to photograph, even for beginners, and you will absolutely love your pictures!

February 13 - 18, 2027



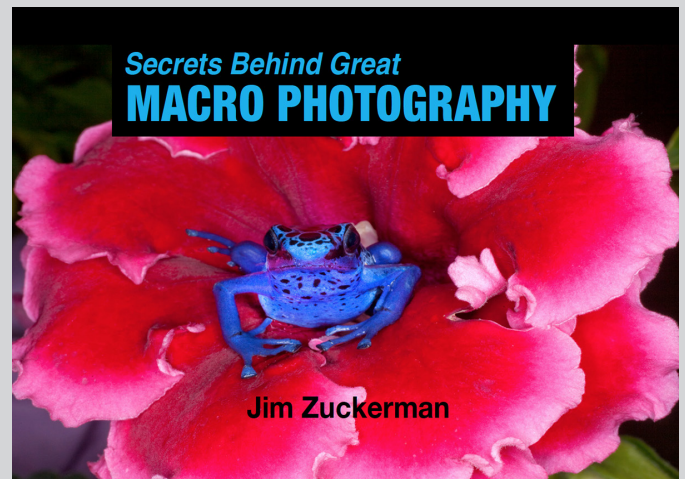
TEXAS BIRDS

Get up close and personal to many species of exotic and colorful birds. We shoot from a blind and get frame-filling shots of cardinals, green jays, crested caracaras, painted buntings, and more. Based in McAllen, Texas.

May 12 -15, 2027

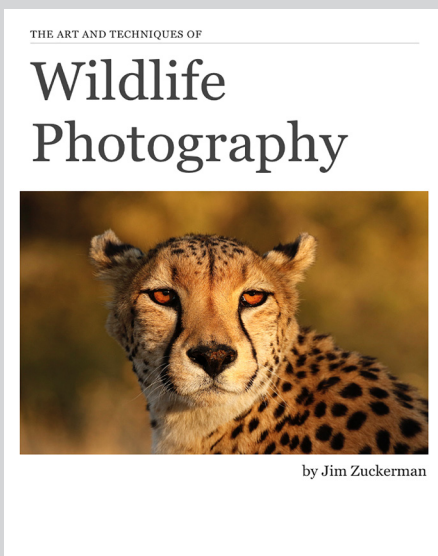
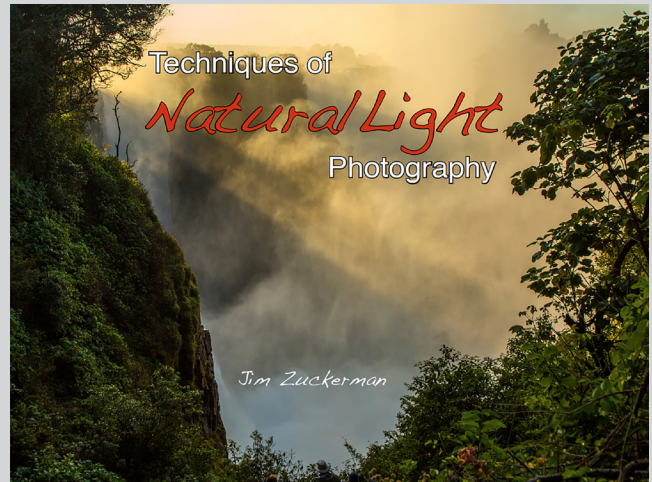
Expand your photographic artistry with *eBooks*

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eBooks continued

Click on any ebook to see inside



Carnival in Venice

January 30 - February 5, 2027



What's Wrong with this Picture?



I photographed this costumed model in Venice last month during carnival. The picture was taken from San Giorgio Island right across from San Marco Square. In my view, this image has three problems with it. First, it's too dark. Second, the boat in the background isn't attractive at all and it's somewhat distracting. And third, while the church right behind the model is beautiful, this angle of the city isn't appealing.

When I took this shot, I wasn't paying attention to the background because I intended to use Photoshop to create the ideal image. That's exactly what I did on the next page.

The medieval skyline of Venice isn't complete without the famous St. Mark's Campanile (the tower) known the world over. So, to create the appropriate as



well as pleasing backdrop for the model, I took a 7-frame panorama shot of the skyline. This turned out to be much better than simply using a wide angle lens. The images were stitched together in Photoshop, and I pasted the model as well as the stone platform she's standing on in front of the city. I then used the dodge tool to lighten the costume and the mask.

A picture like this couldn't be taken with a single exposure. If I'd used a wide angle lens -- and this looks like a wide angle shot -- the buildings would appear much smaller and further away. If I had used a medium telephoto, the buildings wouldn't be sharp because there is so little depth of field with a telephoto lens.

Sometimes we have to use Photoshop to manipulate elements in a composition so the final image replicates what we see. This seems strange, but it's necessary at times. \$

Indonesia Wildlife

October 29 - November 8, 2027

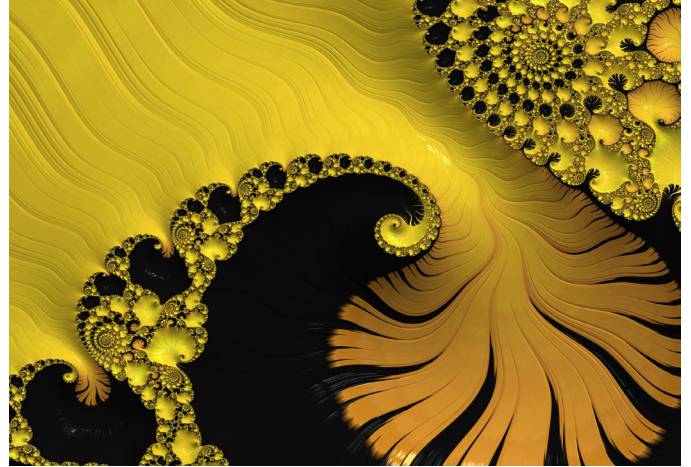


SHORT AND SWEET

1. Some animals stay so still that long exposures from a tripod are possible. I photographed this insect in Borneo on the forest floor. It was quite dark, so I had to use a 4 second exposure. The subject is tack sharp because it was absolutely motionless.



2. FraxPro is a very cool generator of beautiful fractals for the iPad. It costs \$5. It generates hi res images that you can download to your computer and use in combination with various photographs. The fractal designs are stunning in and of themselves, too. There is no end to what you can create.



3. If you haven't used the Photoshop plugin, Flood, you are missing out. It makes realistic watery reflections, and once you have it, you'll start reflecting *everything* in your photo library. It's very easy to use: with one slider, you first establish the water line and then with another slider adjust waves in the water.



4. Wide angle images of animals are unusual because in order for the photographer to fill the frame with the subject, he or she has to be very close to it. So, when you can get a shot like this of an elk, the image really stands out. I took this picture through the fence that corrals hundreds of elk at Jackson Hole in winter. §



Ethiopia photo tour

Go back in time 20,000 years

January 5 - 18, 2027



ASK JIM

Every month, Jim answers a question from his online students, from people who participate in his tours and workshops, or from subscribers to this magazine. If you have a question you'd like Jim to answer, please drop him a note at photos@jimzuckerman.com.

Q: Jim . . . What are my options when an airline wants to weigh my carryon because there is a weight limit, usually about 7 or 8 kilos (15 to 17 pounds). This makes it really tough for photographers. Forcing us to check in our expensive camera gear is terrible.

Fred Lee, Cookeville, Tennessee

A: In this situation -- and I deal with this all the time -- the only option is to wear a photo vest with large pockets. The airlines never weigh what you wear. Therefore, you can fill the pockets in the vest with wide lenses and a camera body. Long lenses won't fit, but taking out a couple of lenses and a body will most likely allow you to pass the weight limit problem. If you don't end up needing to use the vest, fine. But at least you have a backup plan.



Partial List of Photography Tours 2026 - 2027

EXOTIC COLOMBIA BIRDS
Sept/Oct 2026



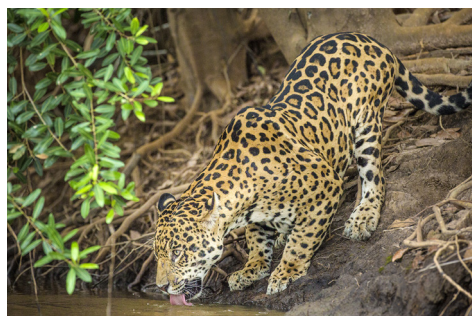
ASIA for BEGINNERS
Oct 2026



DUBAI & ABU DHABI
Nov 2026



THE PANTANAL, BRAZIL
Nov/Dec 2026



WINTER WILDLIFE WORKSHOP
Dec 2026



ETHIOPIA
Jan 2027



CARNIVAL in VENICE
Jan 2027



GREAT GRAY OWLS
Feb 2027



TEXAS BIRDS WORKSHOP
May 2027



CHILE: THE DESERT to the SEA
Oct 2027



VIETNAM
Oct 2027



INDONESIA WILDLIFE
Oct/NOV 2027



WINTER WILDLIFE WORKSHOP

December 16 - 20, 2026



Mountain lion



Arctic fox

STUDENT SHOWCASE

Each month, Jim features one student who took beautiful and inspiring images on one or more of his photography tours or workshops. It's really fascinating how photographers see and compose such different images even though we may go to the same places. Everyone takes great photographs on Jim's trips.

Bill Stark, Lakewood Ranch, Florida. [Ethiopia photo tour](#), [Vietnam photo tour](#), [Frog and Reptile workshop](#), [Indonesia photo tour](#), and [2 tours to China](#).



© Bill Stark

Student Showcase, continued



Student Showcase, continued



© Bill Stark



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DUBAI & ABU DHABI TOUR

November 14 - 22, 2026



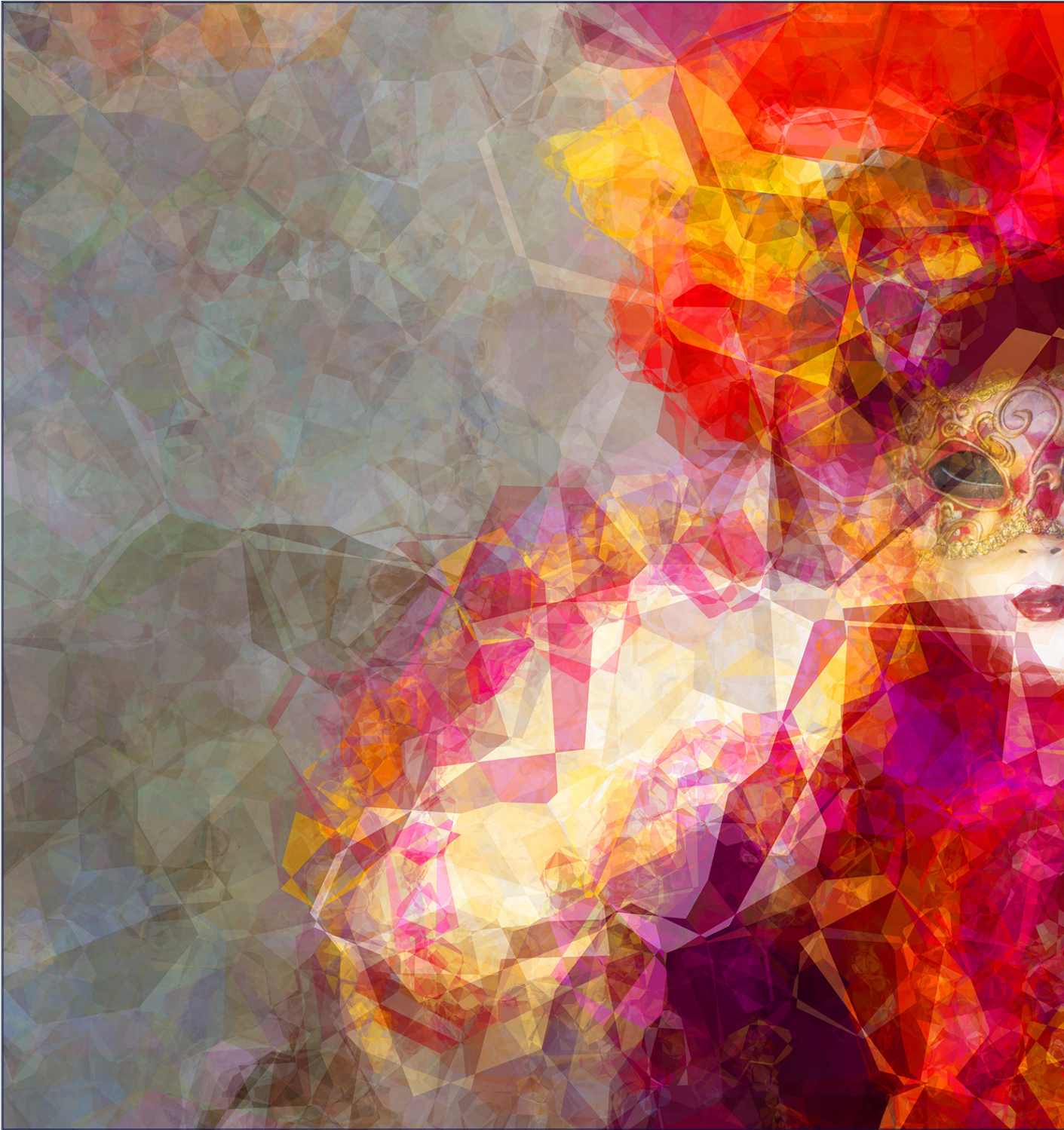
Great Gray Owls workshop

February 13 - 18, 2027

spectacular action shots



The Story Behi



nd the Picture



From the very beginning of my involvement in photography, I tried to turn my pictures into paintings -- or at least, images that looked more like paintings than photographs. I experimented with all kinds of techniques, but nothing I tried back then comes close to what we can do now.

The image at left started out as a portrait of a costumed model in Venice, Italy, during Carnival. One of the suite of effect filters I use is called Filter Forge. It consists of (give or take) 14,000 different filters. Really. It's truly amazing to have at your finger tips so many creative effects.

The filter I used on this image is called *Shatter*. The effect is similar to placing pieces of broken glass over an image. Within each filter, there are many sub-filters that allow you to tweak the effect in various ways. Exploring dozens or even hundreds of the filters in the program is engaging, intriguing, and ultimately very creative.

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PHOTO INSIGHTS
 you would like to read.

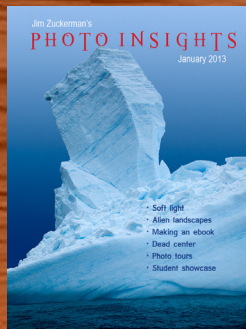
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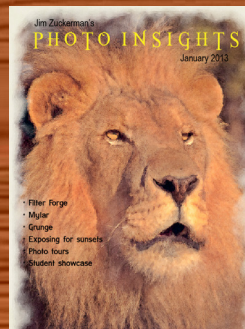
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Jan. '13



Feb. '13



Mar. '13



Apr. '13



May '13



Jun. '13



Jul. '13



Aug. '13



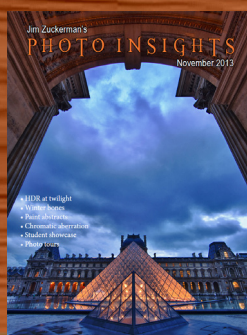
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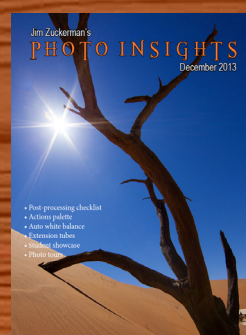
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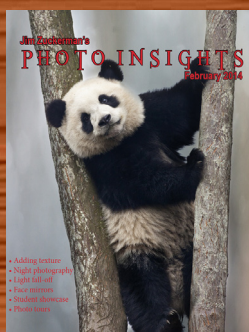
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Feb. '14



Mar. '14



Apr. '14



May '14

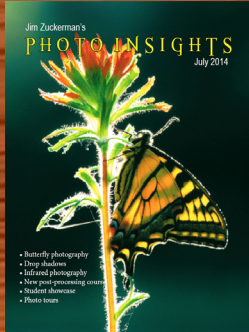


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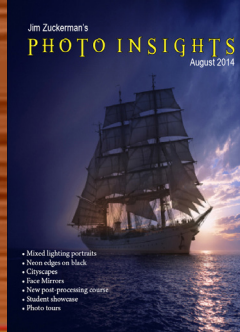


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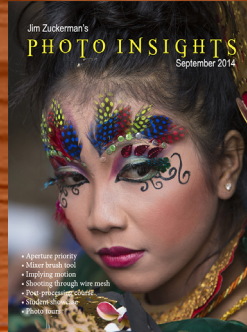
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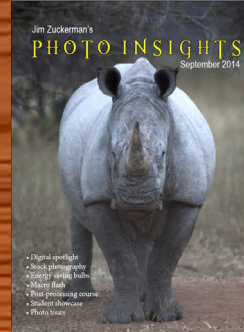
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Sept. '14



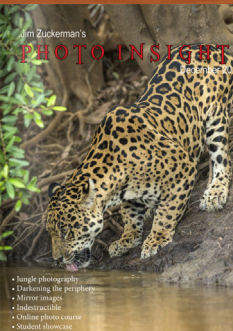
Oct. '14



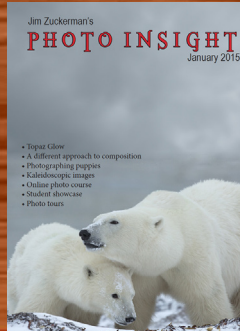
Nov. '14



Dec. '14



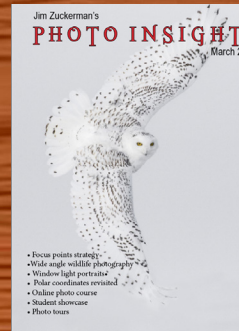
Jan. '15



Feb. '15



Mar. '15



Apr. '15



May '15



Jun '15



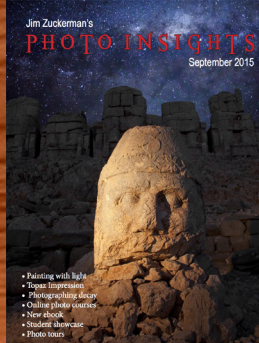
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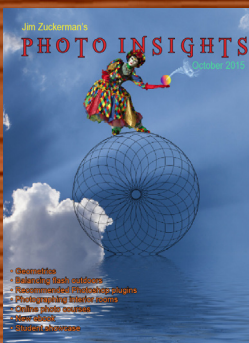
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Sept. '15



Oct. '15



Nov. '15



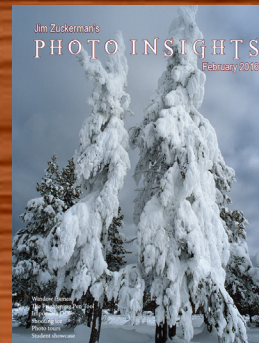
Dec. '15



Jan. '16



Feb. '16



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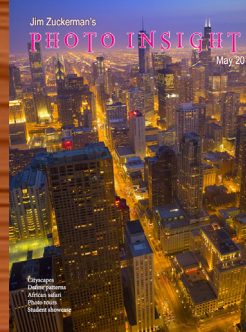
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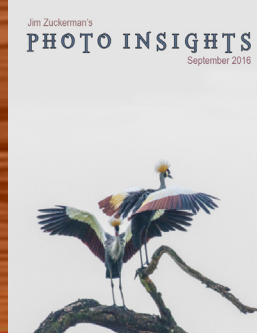
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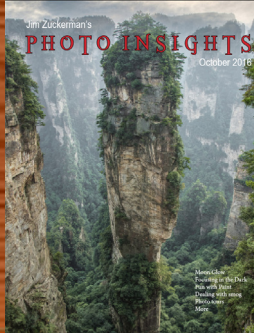
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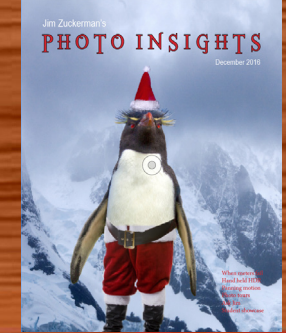
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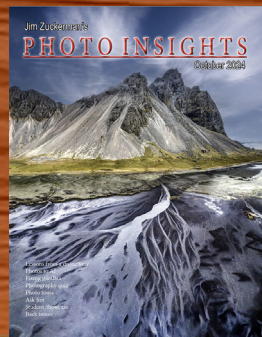
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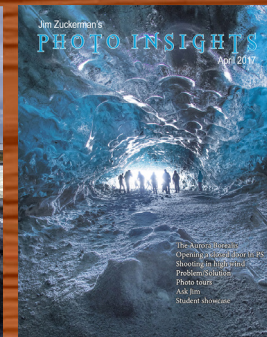
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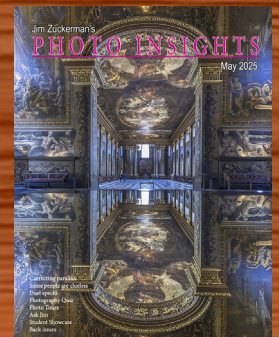
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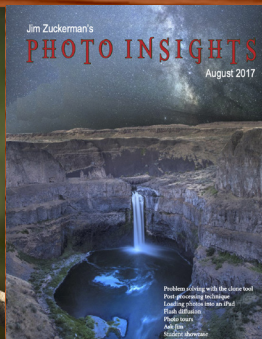
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Sept/Oct. '19



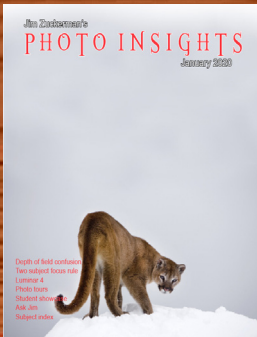
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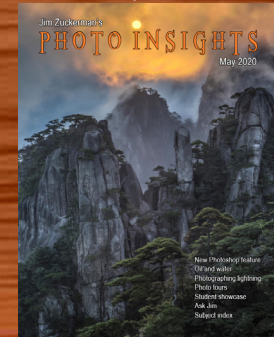
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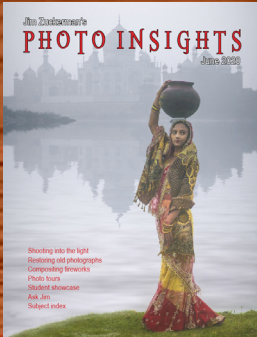
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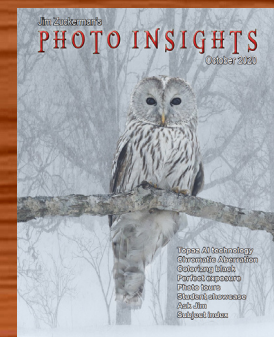
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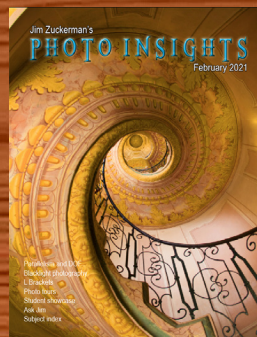
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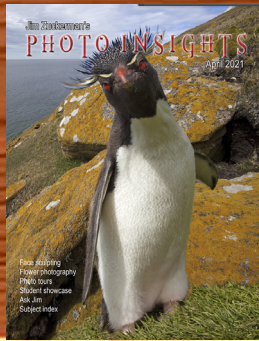
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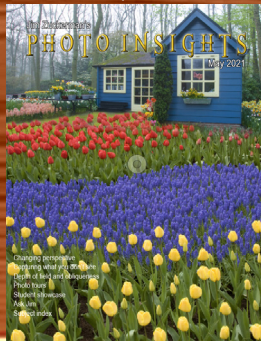
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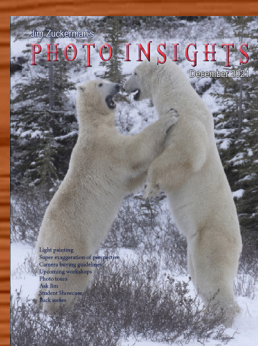
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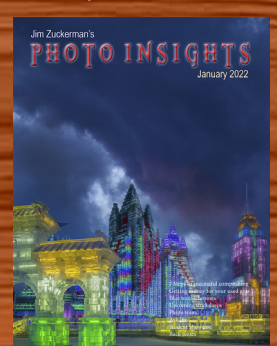
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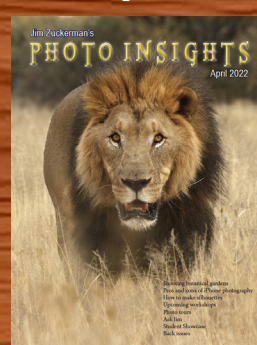
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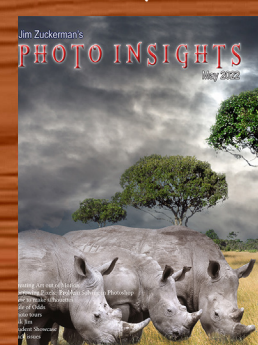
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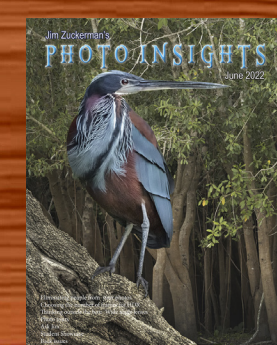
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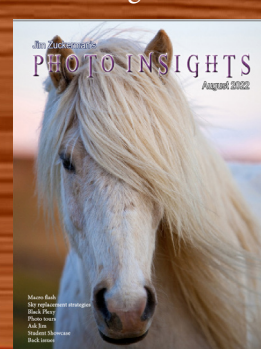
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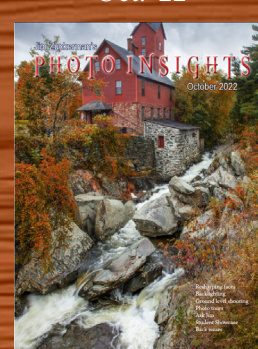
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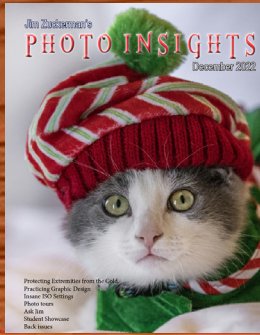
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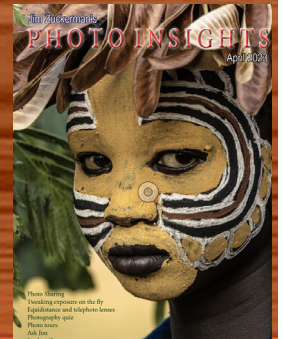
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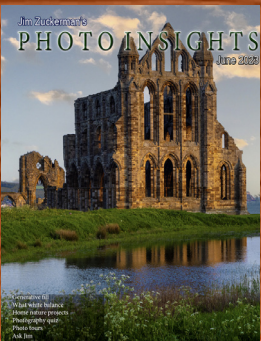
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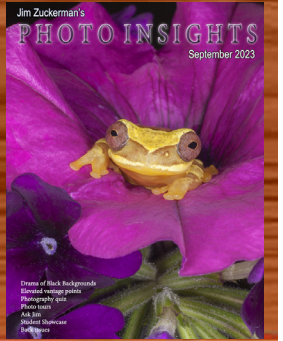
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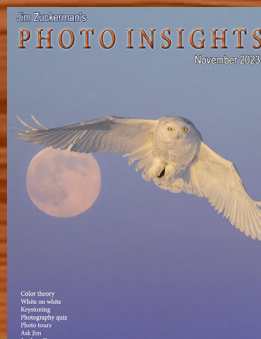
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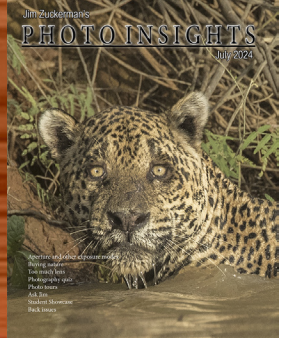
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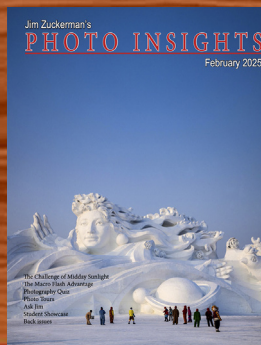
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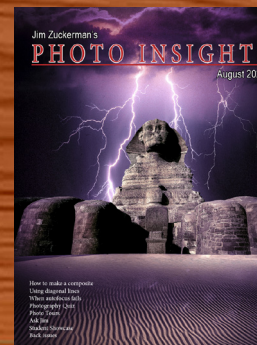
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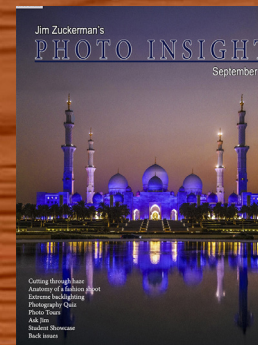
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White on White	Nov. '23
White vignette	Aug. '15
White balance	Feb. '15
White balance, what's the best	Jun. '25
White balance, custom	Mar. '16
White balance, What	Jun. '23
Wide angle conundrum	May '19
Wide angle distortion, correcting	May '24
Wide angle landscape technique	Aug. '25
Wide angle lenses	Mar. '13
Wide angle portraits	Nov. '14
Wide angle lenses	Jun. '17
Wide angle lenses: Outside the Box	Jun. '22w
Wide angle keystoneing	Nov '17
Wildlife photos with wide angles	Mar. '15
Window light	Dec. '15
Window light portraits	Aug. '18
Window light portraits	Feb. '24
Window frames	Feb. '16
Winter photography	Dec. '12
Winter bones	May '13
Winter photography	Dec. '15
Winter photography	Nov. '18
Wire Mesh, Shooting Through	Jul. '18
White balance	Mar. '26
Workflow	May '13

Quiz answers

1. b
2. a
3. b
4. b
5. b
6. c
7. b
8. a
9. a
10. d

Your score

90% - 100%: You could have been a pro

80% - 89%: Your glasses probably need a new prescription

70% - 79%: Just don't quit your day job

< 70%: You should really be using an iPhone

CHILE: THE DESERT to the SEA

The Atacama and Beyond



Atacama Desert



Marble Caves



PHOTO INSIGHTS

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email:

photos@jimzuckerman.com

Edited by Donald Moore

Polar bears sparring near Churchill, Manitoba, Canada