ct Photo

c't *Photography* *Digital*

The in-depth quarterly for the photo enthusiast

5 of the best from 70-600mm

Telezoom Test

Canon, Sony, Nikon, Tamron, Sigma

Wildlife Workshop

Up Close and Personal

Reducing Shutter Noise

9 Slide Scanners Tested

Tricks of the Trade
How the Fine Art Market Works

A New Take On Color

Fast, precise editing with L*a*b* instead of RGB

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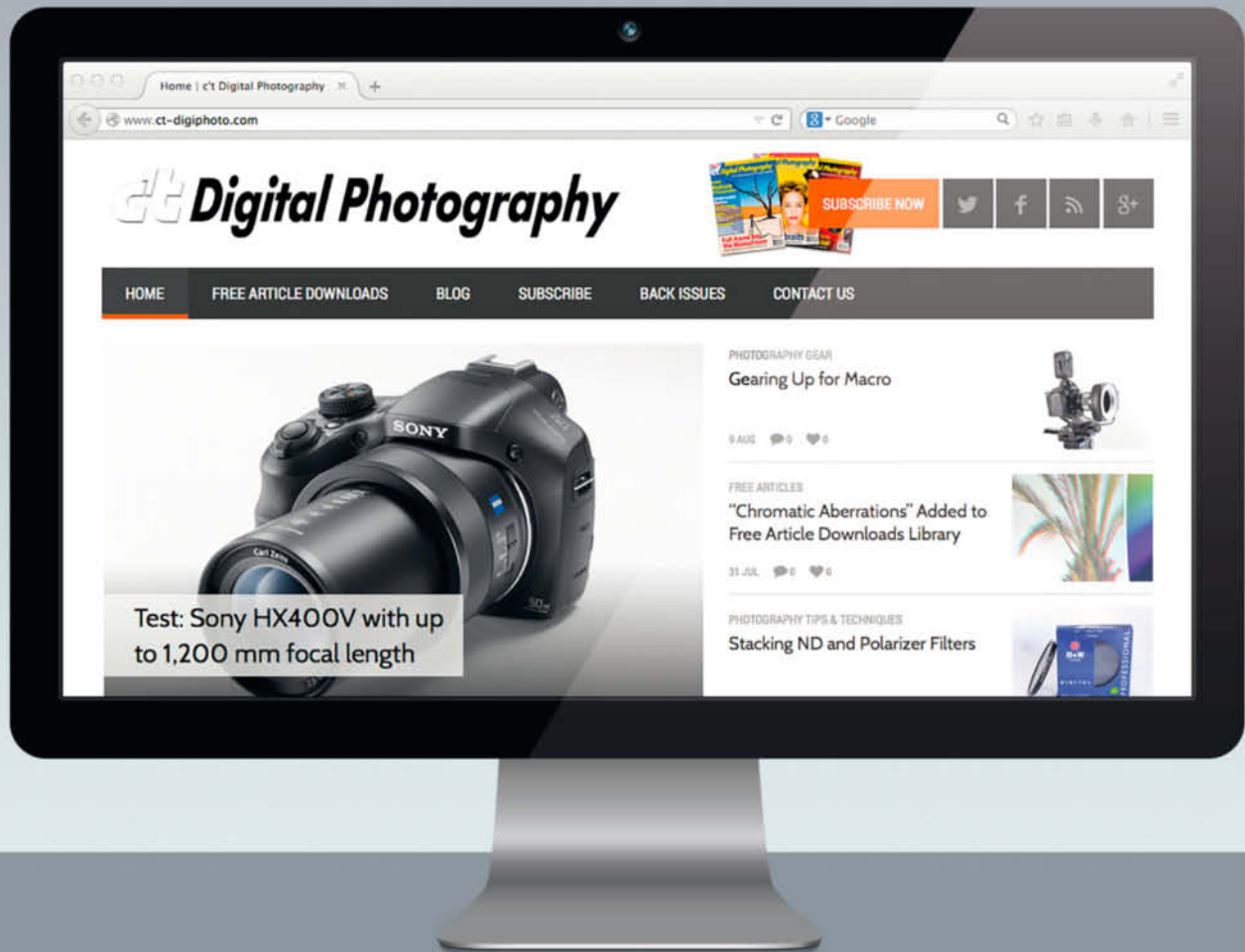
17 (2014) • **$14.99**
Fall Issue
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New Website!

We invite you to look around the new c't Digital Photography website! The teams in both the U.S. and Germany are beyond excited to present this shiny new online home for c't Digital Photography. Apart from the sleek new look, the website boasts an integrated blog, which is continually updated with industry news and original content from our editors in Germany, the U.S., and our professional photography friends who want to share their knowledge. ct-digiphoto.com will bring our stellar online community closer together, spark lively and important discussions about this quickly changing photo industry, and offer artistic support and knowledge for those seeking it.

ct-digiphoto.com

Our art director Thomas Saur was skeptical when we asked him to illustrate our *Lab Color Corrections* title story and got him to try out some Lab color edits for himself. Once he had given them a go, he was just as convinced as we are that Lab mode makes a fantastic editing tool. Once you know how, you can use it to separate color and brightness data in your images and edit them faster and more precisely than ever before.

The familiar RGB editing steps no longer apply, and you will have to alter your rhythm and style when it comes to adjusting your images, but don't worry – it's definitely worth leaving the familiar terrain of RGB and giving Lab mode a try, at least for a while.

Some of you have commented on how few photos of animals we print, so issue17 is where we make amends! Alongside our portfolio of fabulous images of horses, our workshop with acclaimed wildlife photographer Benny Rebel will give you all the tips you heed to capture wonderful images of our scaly, furry and feathered friends, whether at home, in the zoo or on safari.

Happy shooting and see you next time!

Juergen Rink

Telephoto Zooms   22

Wildlife Photography   46

Cover Shoot

Pro photographer Thomas Saur explains how he created this issue's stunning cover shot.

Portfolio

Wiebke Haas creates animal portraits that radiate strength and vitality while giving the viewer subtle insights into the character of their subjects.

Telezoom Lens Test

Telephoto zooms are loved by hobbyists and scorned by pros in equal measure. We check out five current models and put the myths surrounding these monsters to the test.

Camera Tests

The Panasonic GH4 introduces pro-grade video capture in a mirrorless system camera, while the Nikon Df takes modern SLR photography back to its manual, user-driven roots.

Wildlife Photography Workshop

Renowned wildlife photographer Benny Rebel explains how to capture fantastic photos of animals.

Scan Workshop

We test the best film scanners on today's market and explain how to scan your analog archives efficiently.

Mobile RAW Processing

RAW processing on mobile devices is moving into the mainstream. We introduce the best of the current crop of Android and iOS apps.
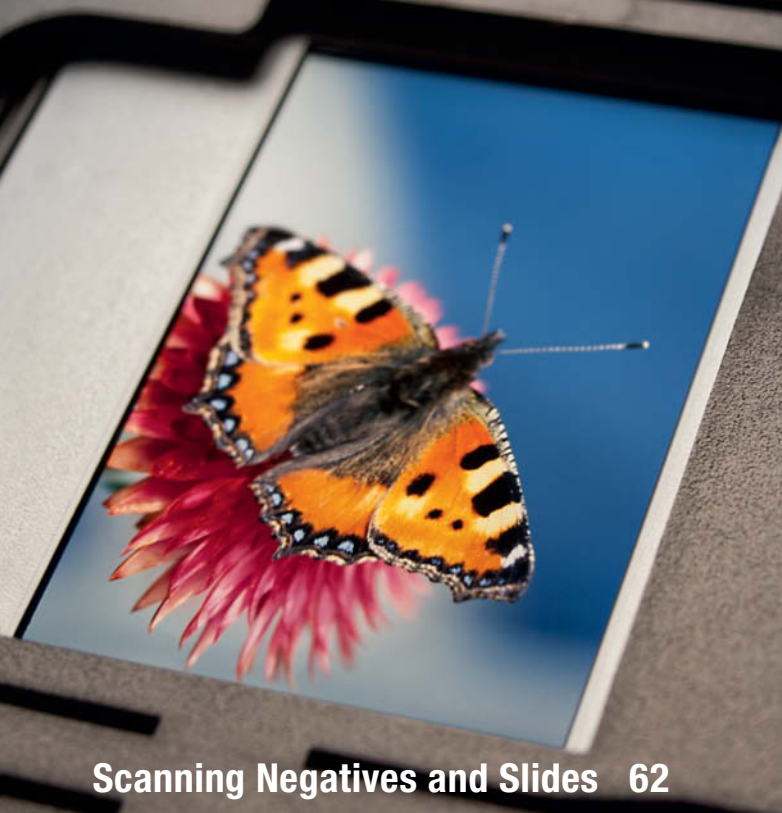
Reducing Shutter Noise

Camera noise often scares sensitive subjects. We investigate where mechanical noise comes from and explain how to reduce it to a minimum.

Scanning Negatives and Slides 62

Lab Color Corrections 100

A New Take On Color

Many RGB-based color corrections are much quicker and easier to perform in Lab mode. We introduce some basic Lab processing techniques and the tools you need to perfom them.

The Fine Art Photo Market

Have you ever considered selling your photographs on the fine art photography market? We help you to check whether you have what it takes to make it big.

About Us

DVD Download

If your copy of the magazine contains no DVD, navigate to www.ct-digiphoto.com/dvd172014 to download the DVD content for free.

Free DVD

Full Version Software: Zoner Photo Studio Pro 16 PRO

A comprehensive image editing suite with a wide range of tools for correcting, managing, archiving and presenting your digital image archives.

Camera Shutter Sounds

We tested 30 different DSLR, SLT and mirrorless cameras and measured the noise levels they produce while making an exposure. The original audio files are included on DVD.

Videos

- Elliott Erwitt and Marc Riboud:
  Around the World in 80 Years
- Outdoor Workshop: Safe Portraits II
- Tutorial: Sharpening in Lightroom
- Workshop: Changing Light Direction
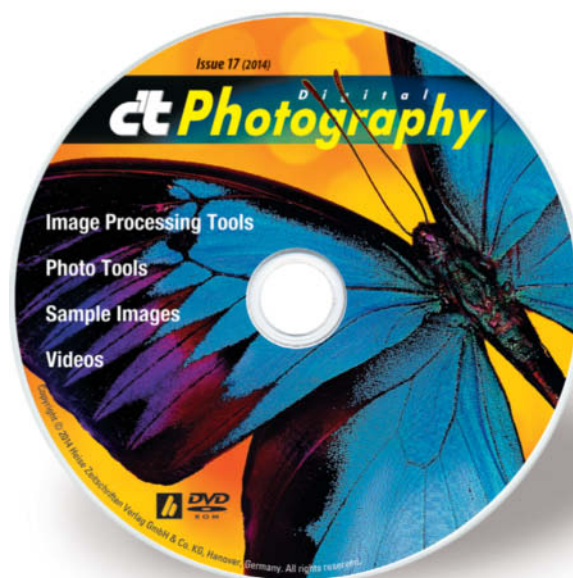
Reader Forum

Shooting RAW

I have a complaint about your review of the subject cameras in issue 15. You determined the camera ratings based on JPEG images and only mentioned RAW as an 'afterthought'. I believe that a majority of people buying a camera of this type will be shooting in RAW and processing the images themselves. Personally, I shoot only in RAW and use Lightroom 5 and Photoshop CC to process and edit images. JPEG only shows how the manufacturer's in-camera software processes the image and RAW shooters do not depend on in-camera software. Considering that DxO Mark Labs rate the Canon EOS 70D sensor at a score of 68 and the Nikon D7100 at 83 out of 100 your claim that the Canon produces slightly better images in JPEG is misleading. I am very disappointed in your article.

I have bought almost all issues of *c't Digital Photography* since the beginning. I think you are the best in-depth photo magazine on the market and I buy the magazine because you publish tech info that goes far beyond that provided by most magazines. I am an advanced user since the 1970s and have done some part-time pro work. I bought a Nikon D7000 about 3 years ago because I could use it with my kit of 4 prime Nikkor lenses. I have been very happy with this camera and will probably add the D7100 soon. Others too may need a better review you than the one you published. Thanks for considering my comments. I will continue to buy *c't* anyway.

Marlin Collier

You're absolutely right: Most people buying a camera like the Nikon 70D or the Nikon D7100 will shoot in RAW - most likely because they can process their images much more effectively than they could using just JPEG. The issue here is deciding which of the millions of possible outcomes is the 'right' one. Pictures captured with different camera models utilize totally different RAW formats and the latest ones are often not yet compatible with popular RAW processing software. We are constantly faced with the question of which software to use for our tests. Lightroom? Or why not darktable? We also have to decide which process to use, and that's just the beginning... We assume that all camera manufacturers will attempt to produce the best possible results with their JPEG processing algorithms, so we consider using JPEGs to be a fair way to work around the endless choices involved. Of course, each camera can still produce better quality images with appropriate processing. To help you form your own opinion as to which version is better, we will be including RAW versions of our test images on all future DVDs.

Color Temperature

c't Digital Photography issue 16 is great. I think the best articles were the macro photography, natural light and 'learning to see' articles. Please keep those composition and open-source software articles coming.

There is an error in issue 16, page 81 in the caption: "The famous 'blue hour' shortly before dusk produces..." 'Blue Hour' is shortly after dusk or before dawn. 'Golden Hour' is shortly before dusk or after dawn.

Near the bottom of column 2, page 81 you state: "Low Kelvin values indicate warmer-looking colors, while higher values represent cooler colors." From an astronomer's point of view lower Kelvin values are indicative of red (cooler) stars and higher Kelvin values represent blue (hotter) stars. In photography we look at color temperature differently: low Kelvin values are for cooler, blueish light and high Kelvin values are for warmer, reddish light. On page 81, you say: "Daylight on a cloudy day has a color temperature of about 5500K, whereas a cloudless sky has a Kelvin value somewhere between 8000 and 12000." According to my camera manual (Nikon D800, page 145) and a few other books, direct sunlight (i.e. cloudless sky) has about 5200K, a cloudy sky about 6000K and shade about 8000K. Thanks for the wonderful publication.

Richard

The 'blue hour' is a slightly subjective term and depends on how you define "dusk". For example, according to ask.com, dusk is "The commencement of darkness in the evening that occurs after twilight". In other words, after "twilight" (i.e., sundown) is before "dusk".

There are also quite a few conflicting descriptions of color temperature in circulation. The most common definitions we have found give morning and afternoon sun a value of about 5000K, midday sun and cloudy sky 5500K, overcast sky 6500-7500K and cloudless sky just before or after sunrise 9000-12 000K.

Focus Stacking

Your article on focus stacking in issue 16 got me thinking about image size. As focus is changed by either moving the entire kit on focusing rails or simply using lens movement to focus, the size of the image varies and the effect is different at different distances. I.e., three items with a height of 10 mm separated by 10 mm of depth will have different size ratios dependent on where the focus plane is, thus making perfect alignment impossible.

I've seen this in some of my own flower pictures where the desired depth was quite large (~100 mm) and I could not get perfect petal edge alignment using Photoshop. The author did not address this.

Randy Lund

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c't Digital Photography Now on Android

The *c't Digital Photography* app for browsing and reading our top-notch content is now available for Android. The new app includes search, bookmarking and sharing functionality and is virtually identical to the iOS version. You can use your subscriber login details to access all issues, regardless of when your subscription actually began. The app is compatible with Android 4.0 and higher and is available on Google Play.

Tell us what you think:

We are always happy to receive your comments and suggestions in a letter, an e-mail (editor@ct-digiphoto.com) or at www.facebook.com/ct-digiphoto. We reserve the right to abbreviate your input for publication. Our comments are printed in italics.
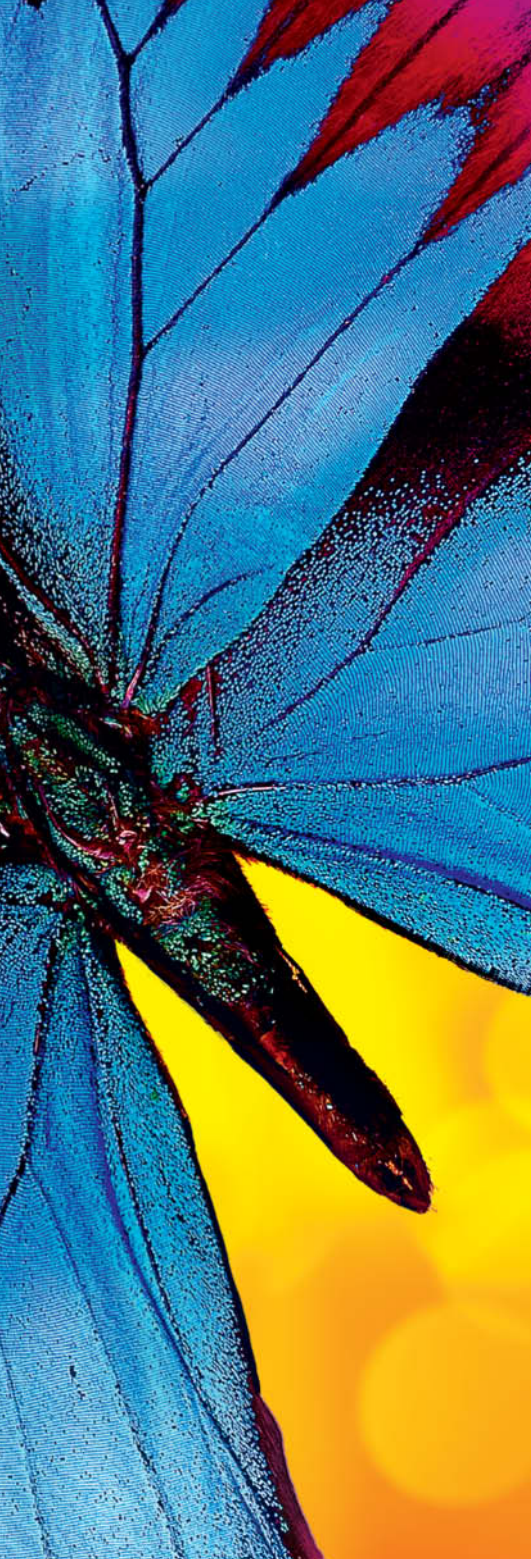
Butterfly Shoot

How this issue's cover image was made

Pro photographer and art director Thomas Saur produced the fantastic shot of a Blue Mountain Butterfly for this issue's cover. This article tells you how he created the image and how he solved the challenges involved in capturing this wonderful close-up.

Photographers are often described either as 'picture takers' or 'picture makers' and Thomas Saur definitely sees himself as one of the latter. He leaves nothing to chance when constructing his images and is always in control of the situation, right down to the very last detail. Our brief for an animal portrait with bright, shining colors was right up his street. Instead of portraying a living creature in natural surroundings, Saur decided to photograph a prepared specimen that he bought on eBay for about US$50. Explaining his choice of a blue butterfly he says, "Butterflies are one of the few insects that people perceive positively. I also found its beautiful shape and bright colors extremely appealing."

His first few attempts to portray his subject in daylight fell flat: "Butterflies are very sensitive to changes in light and I wasn't able to control the daylight precisely enough." Saur decided to head back to his studio where he was able to take complete control of his lighting. Different lighting setups produced varied results, and sub-optimum lateral light quickly led to images that made the butterfly look like crumpled aluminum foil. He finally ended up using colored lights set up as shown in the sketch below. The butterfly itself was placed on a sheet of glass and the images were captured in RAW format using a medium-format Hasselblad H4D with a 120mm macro lens.
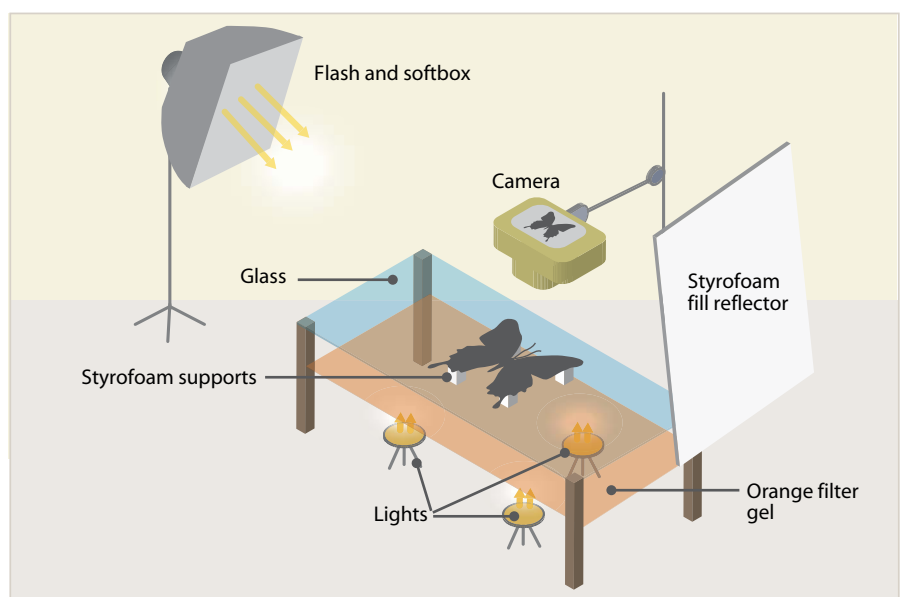
The final image was constructed from two separate source images captured using different exposure parameters. In addition to optimizing the colors, sharpness and contrast, post-processing also involved a number of 'beauty' corrections. "I retouched a lot of tiny dust particles and damaged spots on the butterfly's wings", says Saur. In close-ups

Photographed in daylight, our subject looks really quite mundane

like this, even the tiniest imperfections are immediately obvious to the viewer. The final version has intense, shining colors and makes a perfect cover image. Unfortunately, the limitations of the offset printing process don't allow us to reproduce the colors to look as enticing as they do in the digital original, which we have included on this issue's free DVD.　　　　　　　　(sea) **c't**

Thomas Saur
www.thomassaur.de

**Colored lights give the image
a much more intense look**

Flash and softbox

Camera

Glass

Styrofoam
fill reflector

Styrofoam supports

Lights

Orange filter
gel

DVD Highlights & Contents

Safe Portraits II: Outdoor Workshop

Video tutorial: Pro photographer Bert Stephani shows you how to quickly create perfect portraits in tricky outdoor situations.

In part 1 of this workshop (see issue 16 of **c't** *Digital Photography*), renowned portrait photographer Bert Stephani explained how to create expressive indoor portraits in no time. The second part of his workshop goes into detail on what to look out for when you are shooting portraits in outdoor situations: for example, how to position female subjects so that you don't produce unwanted shadows around their eyes or nose. Stephani also investigates the differences between shooting portraits of men and women. He often uses 'harder' lighting, different viewpoints and more dynamic perspectives to portray male subjects, explaining that, "Men don't like to look pretty, they like to look handsome and cool." It is surprising how much difference a tiny change of camera position can make to the look of the resulting image.

This video tutorial clearly demonstrates the individual steps involved in applying these techniques and offers plenty of examples to help you see how they work. To conclude, Stephani also talks about how to choose an appropriate background.

Image editing plays a secondary role in Stephani's work, and he sticks to a minimum of processing steps, such as cropping, sharpening, basic contrast and color corrections, or conversion to black and white. His overriding motto is always to keep things simple, during a shoot and at the post-processing stage.   (sea)

Camera Shutter Sounds

Sample audio files: This issue's camera noise test investigates the wide range of sounds that modern cameras produce. Check out these audio files to hear how loud our test cameras really are.

In a comprehensive test performed in the **c't** audio lab (see page 88), we tested 30 different DSLR, SLT and mirrorless cameras and measured the noise levels they produce while making an exposure. The original audio files for each camera are included on DVD. Using a suitable audio player such as *Audacity*, you can play back the audio files and visualize the sound level curves produced by each camera's shutter.   (sts)


Zoner Photo Studio 16 PRO

Full version software: Zoner Photo Studio 16 PRO is the perfect solution for processing, managing, archiving and presenting your digital image archives.
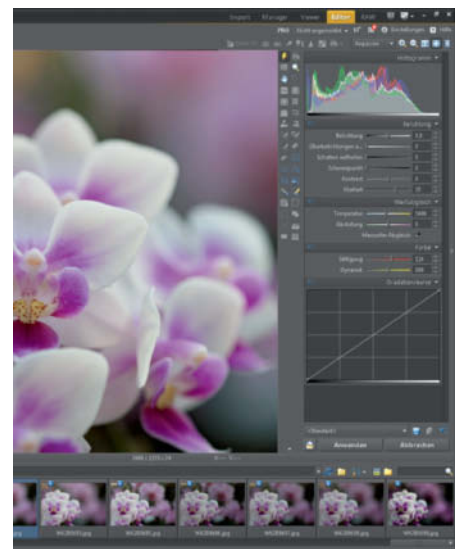
Zoner Photo Studio 16 PRO is a comprehensive and easy-to-use image processing package. The image editor is one of the first available with dedicated touch-driven functionality and includes tools for straightening horizons, red-eye removal, geotagging and content-based scaling. The program offers a range of selection tools, while layers functionality makes editing images a quick and efficient process.

The tools in the latest version are arranged clearly in an easy-to-use sidebar and, if you don't have time to edit your images individually, the unique Quick Fix feature can be used to optimize images automatically. A non-destructive RAW editing module rounds out the program's image processing functionality. The image management and presentation tools provided by the program include upload and share functionality for Facebook, Flickr, Picasa and Web Albums.

This issue's DVD includes a full version of the software. To use the PRO functionality, you have to register your copy from within the program interface. For more details on the software, visit www.zoner.com.   (tho)
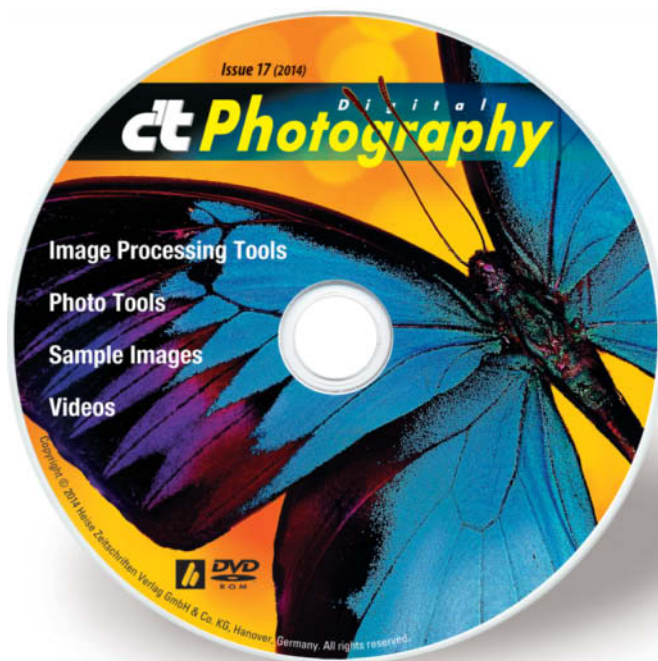
Image Processing Tools

GIMP 2.8.10

GIMP Portable 2.8.10

GREYCs Magic Image Converter (GMIC) 1.5.9.3

Inkscape 0.48.5

Inkscape Portable 0.48.5

Luminance HDR 2.4.0

Photivo 2014-05-25

PSPI 1.0.7

Raw Photo Processor 4.7.2

RawTherapee 4.1

UFRaw 0.19.2

Zoner Photo Studio PRO 16 Pro full version

Photo Tools

Enblend/Enfuse 4.1.3

EnfuseGUI 2.1.3

ExifTool 9.69

FastStone Image Viewer 5.1

FastStone Image Viewer Portable 5.1

GeoSetter 3.4.16

Geotag 0.094

GPSBabel 1.5.1

GTKRawGallery 0.9.9

GTKRawGallery Portable 0.9.9

MacPorts 2.3.1

Sample Images and Files

Camera Shutter Sounds

Digital Original from our Cover Shoot

Film Scanner Sample Images

Lab Mode Images and Actions

Nikon Df and Panasonic Lumix DMC-GH4 CameraTests

Videos

Elliott Erwitt and Marc Riboud – Around the World in 80 Years

Safe Portraits II – Great Outdoor Photos in No Time

Tutorial: Sharpening in Lightroom

Workshop: Changing the Direction of Light
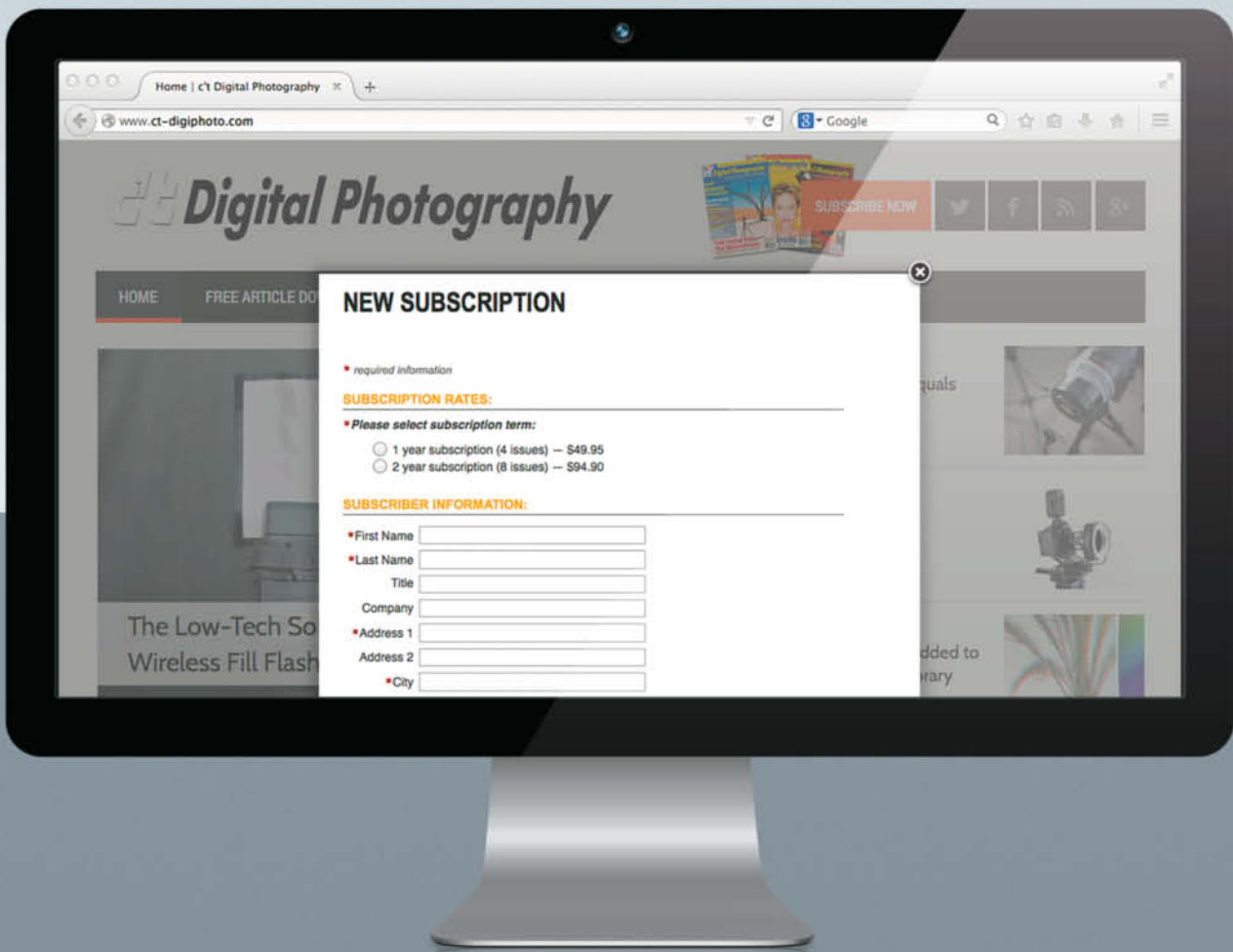
Falsterfee. The idea here was to capture this wonderful mare at a slight angle as she jumped. This was a significant challenge for her, as we had to set up the jump at a very specific angle to the background and our lamps.

Canon EOS-1Ds Mk II | 125 mm | ISO 100 | f10 | 1/250 s