NOVEMBER 2014

α (alpha) UNIVERSE

THE BEAUTIFUL GAME

How Sony Artisans of Imagery Captured Brazil's World Cup Passion

THE PERFECT MOMENT
Chris Burkard Lives for Surfing ... and Photography

INNOVATION NOW!
The Inside Story of How Sony Developed Its Groundbreaking α7 Series

Presented by SONY and the publishers of *Popular Photography* & *American Photo*

Editor's Note

Welcome to α *Universe*!

You could make a good case that we are living in the most innovative era in the history of photography. And that's saying something.

We're certainly living in a time of photographic abundance. Today people around the globe take some 380 billion pictures a year. According to researchers who have analyzed photo-industry statistics and other records, about 10 percent of all the photos ever taken—ever—were snapped in the past year.

Photography has become the language of our time, showcased in museums and splashed in magazines and art books like never before. Meanwhile, the Internet is overflowing with the photos and videos we share on social media, while visual content has become the driving force behind e-commerce and online journalism. Images allow us to see more, learn more, and do more—to experience the world in ways we never have before.

It's a new age with new artistic challenges and opportunities, and it comes with astounding new imaging technology for creative photographers to use in new ways. Photography has always been about the collision of vision and machine, art and science. And today, as you will see in this new magazine, that collision is more spectacular than ever.

Brought to you by Sony and the publishers of *Popular Photography* and *American Photo* magazines, α *Universe* looks at today's most innovative imaging technology and how it is being put to use by many of the world's best photographers and brightest emerging talents.

In this issue, we spotlight work from two members of Sony's Artisans of Imagery group of top pros, Brian Smith and David McLain, who last summer headed to Brazil to capture the color and the crowds of the FIFA World Cup in still images and video. They shot with the new Sony α7S, a 12.2-megapixel full-frame mirrorless camera with a sensor that captures visual detail in extreme low-light conditions, giving them access to soccer's most passionate fans night and day.

We also feature work by rising stars like Brian Matiash, a lifelong Canon user who tried out the 24.3-megapixel Sony α7 for two months and has never looked back. He took the picture on this page, titled "The Power of Thor's Will," with the α7 and a Canon 17mm f/4L tilt-shift lens. (Exposure: six seconds at f/7.1 and ISO 250.) Matiash later added the 36.4-megapixel Sony α7R to his kit and started selling off his older gear.

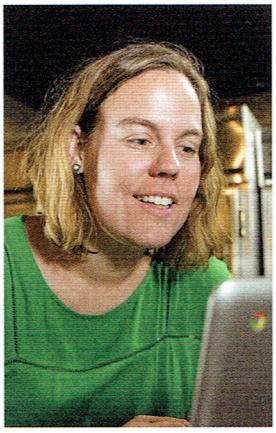
Likewise, Chris Burkard, a California-based surfing and adventure-travel photographer, values the small form factor of the Sony α7: Having a pro-quality camera that he can put in a jacket pocket allows Burkard to, as he puts it, "be present in the moment."

Technology that allows us to express ourselves creatively, and live our lives to the fullest, is the best technology of all. Welcome to α *Universe*.

David Schonauer, Editor

DAVID SCHONAUER

David Schonauer is the editor-in-chief of Pro Photo Daily, a newsletter and website covering the art, business, and technology of photography, and Motion Arts Pro, a newsletter for filmmakers and photographers transitioning into video. He is a contributor to the Huffington Post and has written about photography, art, and other topics for *Smithsonian* magazine, the *New York Times*, the *Atlantic*, and *People* magazine. He is the former editor-in-chief of *American Photo* magazine.



MOLLY K. MCLAUGHLIN

Molly K. McLaughlin is an expert technology writer and editor with more than a decade of experience covering the digital imaging and mobile spaces. She has contributed to many publications including ConsumerSearch and PCMag.com, focusing on reviews and commentary. In her role as editor, she has attended and covered industry trade shows including CES, Photo Plus and PMA. Molly has an M.S. in Journalism & Technical Writing from NYU Polytechnic School of Engineering.

Feature photography © Brian Matiash, Sony Associate Artisan of Imagery

BEHIND THE SCENES: The Sony α7 Series

How Sony created a smaller and faster full-frame mirrorless camera

BY MOLLY K. MCLAUGHLIN

With the Sony α7 and α7R, something extraordinary was achieved: mirrorless full-frame cameras about half the weight of a typical full-frame camera and three times faster than a conventional DSLR. All without making any compromises on image quality. In fact, the 36.4-megapixel α7R has the highest resolution sensor in the history of Sony's α (alpha) line. (The Sony α7 has a resolution of 24.3 megapixels.)

The two cameras offer top-notch image quality and speed, with the zippy BIONZ X processor that offers extra-fast autofocus even for moving subjects. This gives you shooting speeds of up to 4 frames per second (fps) in Live View Mode, and up to 5fps with the OLED viewfinder.

How did Sony achieve this? We spoke with four members of the team that developed these cameras: Takahiro Sudo, Design PL, Daisuke Goh, Product Planning, Koji Hisamatsu, Mechanical Design, and Takuji Yoshida, Image Quality Design.

"The concept of the α7 series is to use a full-frame sensor to pack high image quality into a compact body," Goh explained.

Above: The α7R—the world's smallest and lightest 35mm full-frame interchangeable-lens camera. **Above right:** Model shot with the α7R and the Planar T* 85mm F1.4 ZA SSM (SAL85F14Z), Mount Adaptor LA-EA4, 1/320 sec., F1.4, ISO 100.

They used a lot of their learnings from the productions of E-mount compatible cameras, which included "miniaturization technology," Sudo said. "We wanted the new cameras to be lightweight and robust, and to have a compact body that users would feel comfortable with."

"Our ultimate goal is to change the common sense of the interchangeable lens camera market," Goh stated.

Sony was looking to set itself apart from Canon and Nikon. "Our new cameras are small in size, but superior in performance at the same time," Sudo said. He adds that "particularly, in the Japanese market, consumers are growing dissatisfied with full-frame cameras that are too big to carry around."

The seeds for the idea of the α7 series were planted in 2010, when Sony launched its first mirrorless cameras, the NEX series. "It was just a question of feasibility," Sudo said. Sony's development of their smaller E-mount lenses paved the way. "We felt relieved that we could finally begin development efforts in earnest," Hisamatsu said.

THE CHALLENGES

Customer feedback was a big part of Sony's research. "We wanted to meet consumers' expectations and make them happy," Hisamatsu said. In short, he said, they wanted to "wow the world once again" following the success of their first mirrorless cameras, the NEX series.

Upon the release of the Cyber-shot RX1, a compact, fixed-lens full-frame camera, in the fall of 2012, customers began clamoring for interchangeable lens models.

"Considering these customer requests, we always had an RX1 camera near at hand while we were doing the development," Sudo said. In the next several months, there was much debate about the placement of dials and how to add functions without increasing the size of the camera. He added, "I am surprised that we could manage to put them all into this compact body."

A big challenge is that when you make a product smaller, overheating becomes an issue, but Sony's engineers were up to it. "We solved this problem by arranging metal components appropriately and using heat-transfer sheets," Hisamatsu explained.

Yet another challenge is that they were designing two cameras with different types of materials at the same time. "Since materials influence heat control, it is difficult to create a design for each model with different types of materials," Sudo said.

From left: Yoshida (Image Quality Design), Hisamatsu (Mechanical Design), Goh (Product Planning), Sudo (Design PL)

Both models use magnesium alloy for the top cover. "The α7 camera has a hybrid structure with a front cover made of highly rigid plastic and a stainless-steel plate. The α7R camera uses magnesium alloy for its front cover as well to give a look of premium quality," Hisamatsu said.

Durability was also a challenge. "We adjusted the strength, grip and operability repeatedly, assuming

many different situations including the typical case of the user swinging around the camera with a heavy lens attached to it," Sudo said.

All this is wrapped up in a sleek body. "The design concept is 'verticality and linearity.' But creating a smooth surface was very difficult. Creating clean linearity required a great deal of craftsmanship," Hisamatsu said.

"Many of the cameras from competitors have rounded corners and a bulge generally known as an apron below the viewfinder. We flattened this bulge in line with the concept of linearity," Goh said.

Above: Nature shot with the α7R and the Vario-Tessar T* FE 24-70mm F4 ZA OSS (SEL2470Z), 1.3 sec., F11, ISO 400

ACHIEVING ULTRAFAST SPEED AND PRECISION

In order to deliver fast and accurate autofocus, Sudo said that "both cameras use the newly developed Fast Intelligent AF technology. This feature reduces focusing time by up to 35 percent compared to older models." Additionally, the α7 cameras feature Fast Hybrid AF, which combines phase- and contrast-detect autofocus methods to help the camera track fast-moving subjects.

Autofocus also comes into play when shooting portraits. "You need a sharp focus on the eyes, especially when taking portrait photos," Sudo said. "With a full-frame sensor, however, the depth of field is shallow and getting the cameras into focus is difficult."

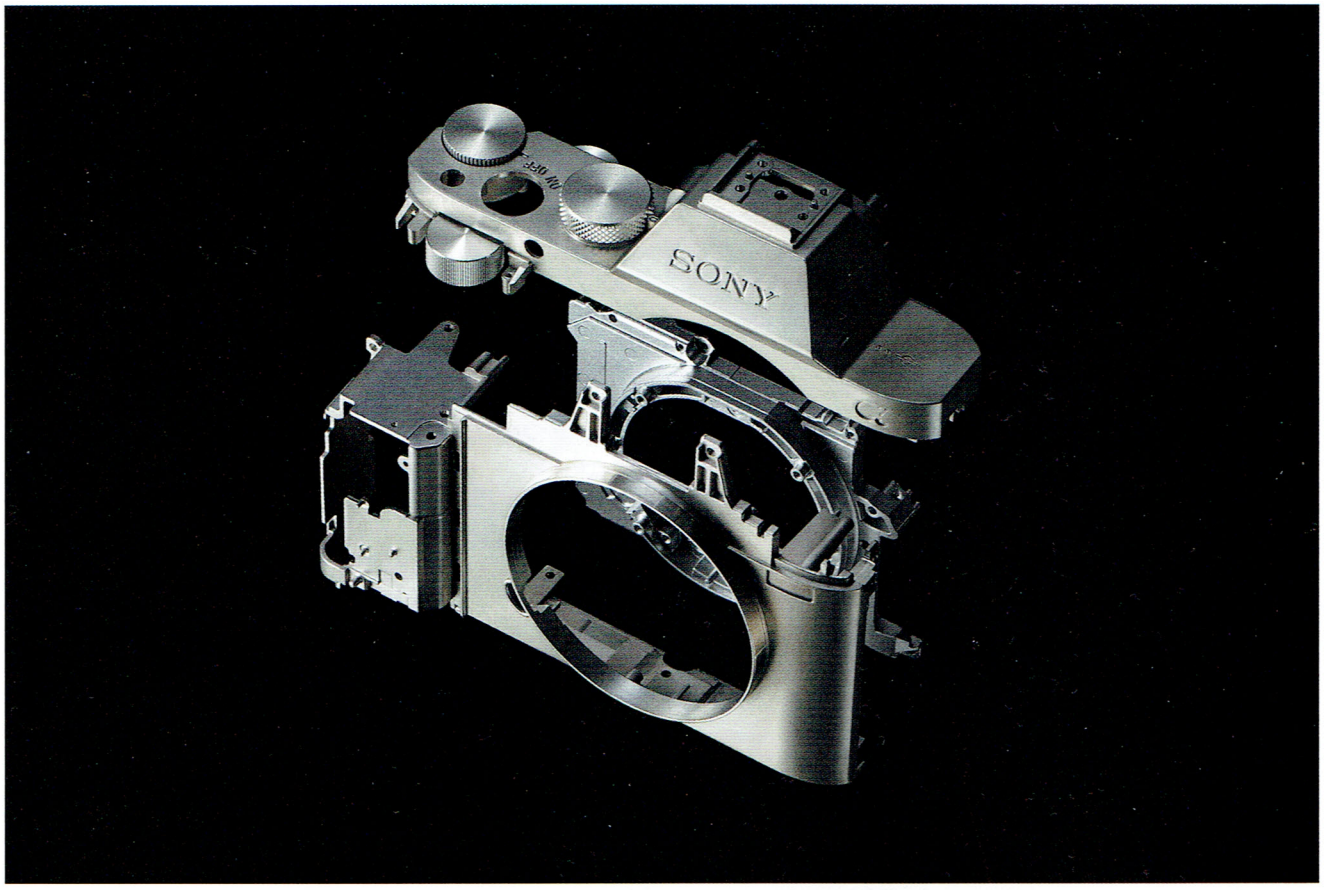
To solve this problem, Sony implemented an Eye AF function that prioritizes a pupil when the camera focuses, Sudo said. "This enables the camera to detect a face and eyes and autofocus on them at the touch of a single button, making the function popular among a wide range of users," he said, adding, "I hear that professional photographers find Eye AF very instrumental and use this automatic function with shooting models for photos in catalogs. Eye AF is highly acclaimed even by professional photographers who basically do their work manually."

Even better, "these cameras can recognize the face even when the subject is not looking straight ahead or it is a child or infant. Their face recognition rate is overwhelmingly high," Goh said.

TOP-NOTCH IMAGE QUALITY

"The α7R model has been developed to deliver the highest image quality," Yoshida said. To make the most of its high resolution, the α7R doesn't have an optical low-pass filter (also known as an anti-aliasing filter), so the camera can capture more detail. "The use of the BIONZ X processor has led to a significant increase in image quality as well," Yoshida said.

Sony engineers used feedback from professional photographers, but that's not all. "We also made trips on weekends to take photos of the natural



landscape, which tend to show clear differences in the sense of resolution. Based on the acquired data, we continued to fine-tune the camera," Yoshida said.

Versatility was another goal with the α7 series. "One major feature of the E-mount lenses is the open mount system that ensures compatibility not only with Sony's lenses, but also with a broad range of lenses using mount adapters," Goh said. In part, he explained, this is meant to encourage "users who own various kinds of lenses, including old lenses, to try the E-mount cameras."

"What sets Sony's E-mount lenses apart are their short flange backs and compact sizes. A vast range of lenses can be used, including 50-year-old lenses. More than 200 types of mount adapters are available, making it possible to use your lenses in many different ways," Hisamatsu said. "I have heard that a man visited the Sony Building in Ginza to try E-mount with 20 lenses in his bag," he added.

"In the past, the pleasure of enjoying lenses in this way was limited to small image sensors. The advent of the α7 series has expanded the range of this pleasure to full-frame lenses, which is greatly appreciated by old lens users," Yoshida said.

Photographers using older lenses don't have to worry too much about fiddling with settings. "When a lens from another company is attached, the camera automatically switches to manual focus mode," Sudo said.

Sony offers a lot of options for those shooting manually. "Features like manual focus assist, focus zoom and focus peaking are also meant for those users who operate the camera in manual focus mode," Goh said.

The team concluded: "The portable full-frame format camera, built on Sony's DNA, provides unprecedented experience, delivering performance and compactness in a well-balanced combination." α

From top: The α7R uses magnesium alloy for its top and front covers as well as for its internal structure; the FE 70-200mm F4 G OSS, Vario-Tessar T* FE 24-70mm F4 ZA OSS, FE 28-70mm F3.5-5.6 OSS, Sonnar T* FE 35mm F2.8 ZA, Sonnar T* FE 55mm F1.8 ZA.

Switching to Sony: *A Photographer's Journey*

Brian Matiash, a Sony Associate Artisan of Imagery, recently made a big change. BY MOLLY K. MCLAUGHLIN

What makes a photographer ditch his old cameras and commit to Sony? In a word, innovation. Brian Matiash's eyes were drawn to Sony when it launched the cutting edge QX series, a lens-style camera that attaches to smartphones. But it was the full-frame Sony α7 camera that really grabbed Brian's attention. While other camera companies were adding Wi-Fi primarily to their lower-end compact cameras, he was thrilled to discover Sony incorporating the technology into their higher-end gear.

Brian preordered the Sony α7, despite having used other cameras since 1996, and after just two months of shooting, he was hooked. Then he ordered the Sony α7R, and started selling off his old gear. Next on his list? The Sony α7S. "Each one serves a purpose," he says, and he's thrilled that the smaller form factor doesn't compromise image quality or usability. Built-in Wi-Fi makes it simple for Brian to send full resolution JPEGs to his smartphone, where he can edit and share his photos on the fly, instead of having to wait until he gets home.

Above: The denizens of Shibuya Crossing, Tokyo, Japan. **Opposite**: Descent to Lower Antelope Canyons, Page, AZ. Both shot with the Sony α7 and a Canon EF 14mm/F2.8L II at 14mm.

Based in picturesque Portland, Oregon, Brian likes to shoot long exposure landscape photos with his α7. In May of this year, he shot the Ironman competition in Australia in the pouring rain, with only a plastic grocery bag to protect his Sony camera; it came out unscathed and he got all the shots he wanted.

As Google's Global Photos Products Evangelist, Brian leverages his knowledge of the photo industry and works with key influencers, partners, and consumers to bring awareness of the Google Photos products and the Google+ platform. α

See more of Brian Matiash's work at **brianmatiash.com**.

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