

*Like what you see?
Buy the book at
the Focal Bookstore*

Click here:

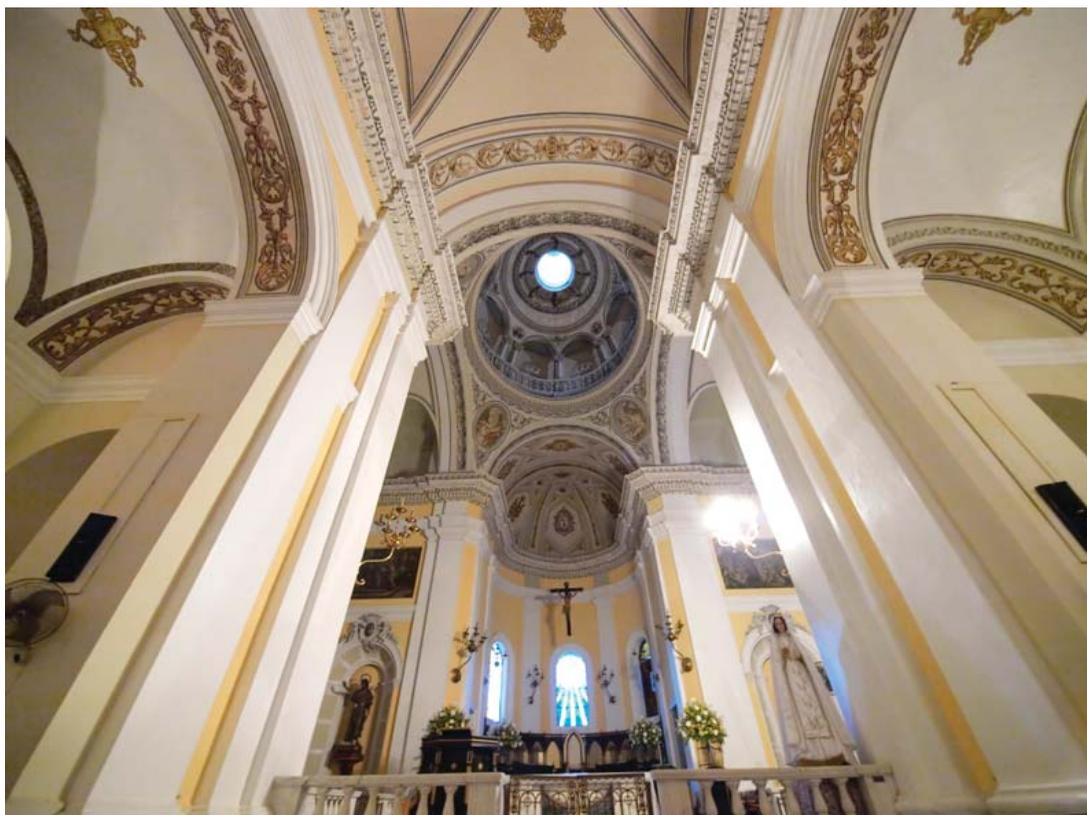
<http://focalbookstore.com/?isbn=9780240809991>



Better Available Light Digital Photography, 2nd Edition

**Farace and Staver
ISBN 978-0-240-80999-1**

6 Tripods and other camera supports



People are under the illusion that it's easy. . . . Technically, it is complex. You have a million options with equipment to distract you. I tell my students to simplify their equipment.

—Brett Weston

Tripods come in many sizes, from tiny tabletop models to heavy-duty camera stands for studio use. Because of the availability of so many types, sizes, construction materials, styles, and even colors, there's never a one-size-fits-all solution. Like eating potato chips, you can't have just one. That's why most of us end up with a *collection* of camera supports, with different tripods for different tasks.



A good tripod must not only be steady to allow long exposures like this one, but the support should stay where you place it so that bracketed images can be combined and remain *in register*. This nighttime photograph of Brighton, Colorado's City Hall was made using Gitzo's Mountaineer Reporter and is a combination of *two* exposures. The first (covering everything from right of the large tree on the leading side) was 8 seconds at f/13 at an ISO of 200. The second was made at 2.5 seconds, because the tree and city hall sign were too overexposed. The camera was a Canon EOS-1D Mark II at ISO 200. The two images were combined in Adobe Photoshop CS2 with a simple cut-and-paste operation. The only other tweaking of the image was a little burning of the light streaks created by traffic. Joe did this because the image without the streaks didn't have as much drama. © 2005 Joe Farace.

Standing on three legs

A properly designed tripod provides better image sharpness than would otherwise be possible handheld. Typically, the average person can handhold a camera at a shutter speed that's equal to the *reciprocal* of the focal length of the lens. In other words, you can usually handhold a 135 mm lens at 1/125 of a second and get sharp photographs. When in doubt, many photographers increase the shutter speed. Did you know that when using cameras with focal-plane shutters, the typical shutter type used for SLR cameras, the effective speed of the curtains at 1/1000 of a second is the *same* as at 1/30 of a second? At higher shutter speeds, the only thing changing is a narrowing of the space between the two curtains.

Image-stabilization and vibration-reduction lenses (See Chapter 5) can produce sharper images, but even the most high-tech lens can't be a three-legged assistant. You can leave your camera perched on a tripod, walk up to a portrait subject to touch up a

If a picture is worth a thousand words, this one says it all about digital photography. Predawn light brightens the horizon as a photographer prepares to photograph the sunrise. He's able to check the scene from the LCD screen on the back of the tripod-mounted camera. © 2003 Barry Staver.



The Tiltall tripod uses a timeless classic design and has been manufactured almost continuously since 1947. This colorful prototype was made for Joe as a potential new model, but it never entered production. The physical design of this Tiltall is the same as was originally produced by Caesar and Mark Marchioni, and is the same as the tripods you can purchase today from major retailers such as Adorama (www.adorama.com) and B&H Photo (www.bhphotovideo.com). © 2006 Mary Farace.



pose, or pick up a twig, and it will be waiting when you get back. Using a tripod also enforces a more deliberate approach to making photographs. Having to *think* about composition before banging off a few frames will improve the quality of your images more than you might imagine. A tripod is also the sign of a serious photographer and produces respect from nonphotographers. For whatever reason, people seem to extend more respect and move out of the way when they see a photographer with a tripod.

Some applications *demand* a tripod. For close-up work, a tripod is a necessity. The use of small apertures for macro work must be compensated for with slower shutter speeds. At the other end of the spectrum, long-focal-length lenses for sports or wildlife photography require a tripod—sometimes two. Depending on the focal length, you may need tripods for the camera body *and* the lens.



Mooning the camera. This total lunar eclipse was the second in just one year and Barry was fortunate enough to photograph both. He turned this personal project into a relaxing backyard evening event. First, his Gitzo tripod was set up in the middle of the yard with a 400 mm f/2.8 lens with a 1.4X teleconverter attached. Two lawn chairs were set up: a laptop placed on one to download and check the first test shots, and one to sit on (these eclipses take a couple of hours start to finish). Next, he reheated several slices of pizza, popped the top on an ice-cold beer, and waited for the eclipse to begin. The tripod was an absolute necessity to hold the telephoto lens/teleconverter combination steady, especially during this dark portion of the eclipse.

There are just a few basics needed for a good tripod. It must be sturdy, but lightweight enough so that you'll use it! After that, it becomes a matter of matching the tripod to your way of working. When Joe realized he could hold a camera steadier than his first tripod could, he threw out the tripod. The head wore out because he ignored the first question you should ask yourself: What kind of camera am I going to use with this tripod? He'd been using a medium-format camera on a tripod that would have given him better service with a 35 mm SLR. The weight of the camera was too much for the head and it wore out. The kind of camera you use affects the type of tripod that's right for you.



When capturing infrared images with an IR-sensitive digital SLR, the “filter factors” of the filters require *long* exposures. This image was made with a Pentax K100D with a Singh-Ray I-Ray filter in front of the lens and had an exposure of 0.7 second at f/9.5 and ISO 800. No matter how good you think you are, you can’t handhold speeds that slow, which is why Joe used a Manfrotto (www.bogenimaging.com) tripod to make this shot. © 2006 Joe Farace.

Stand by My Side

Although they are not portable enough for typical location photography, we want to show you that camera stands are available in many styles, shapes, and sizes—and are dedicated to **studio photography only**. Camera stands provide the ultimate in stability, security, and precision. Because of its size and weight, a camera stand is inherently more stable than are three tripod legs. Camera stands provide a large, heavy base and a large, thick center column with an arm riding up and down and where you can attach a head and other accessories. A camera weight stand provides security for your expensive gear. When using a stand, the chances of your medium- or large-format camera falling over and crashing into the studio floor are negligible. Precision is also an important part of using a camera stand. Most of them glide across the studio floor on ball bearings before being locked down with a foot pedal. The crossbar arm, often labeled in micrometer-like markings for precise camera placement and movement, is important when doing still-life and product photography. The crossbar is, more often than not, gear driven, providing flexibility for lowering the camera to within inches of the floor.

Flexibility is provided by a choice of camera heads and the ability to add accessory trays for laptop computers for image display during digital capture. Camera stands cost more, too, but make you more productive in the studio. You can pay up to \$5,000 for a camera stand without any accessories, but **every** photographer I know who's switched from tripods told me they don't know how they ever survived **without** their camera stand.

It's made of *what*?

On one side of the tripod debate is the “bigger is better” group, who want an earthquake-proof tripod that's also steady in a tsunami. On the other hand, there's the “lighter is better” group, who believe that it doesn't make a difference what a tripod is made of, but that a *lighter* one is more likely to be taken along.

Most tripods are made of metal, with all kinds of alloys being popular, including aluminum and titanium. Some Slik (www.thkphoto.com) tripods have A.M.T. super titanium-alloy legs, a material that has a 40 percent greater strength-to-weight ratio than aluminum does. Carbon fiber is the hot new tripod material, and is the same high-tech substance used in Formula One racing cars to save weight. When used in tripod construction, carbon fiber has many advantages over metal, starting with its extremely light weight and high strength. Carbon fiber is *eight times* stronger than steel, yet is four times lighter—characteristics that have endeared it to race-car and tripod designers alike. In addition, carbon fiber is noted for its ability to absorb vibrations, and has a thermal and expansion transfer rate that's significantly less than that of most metals.

Many photographers assume that aluminum tripods are lighter than wooden ones, but an aluminum tripod with support qualities equal to a wooden tripod actually weighs *more*. It takes heavier metal legs to match the stability and durability provided by the interwoven grain of lightweight wood. When working in extreme temperature conditions, wooden tripods, such as those produced by Ries (www.riestripod.com), who even makes a monopod, can be indispensable. Wooden tripods don't absorb heat *or* cold, so fingers won't stick or get burned as they might with metal.

Slik's A.M.T. (Aluminum-Magnesium-Titanium)-alloy legs make the PRO 780 DX tripod heavy duty and steady, yet it's lighter than it looks. The PRO 780 DX is capable of supporting the weight of professional digital cameras and heavy telephoto lenses up to a 400 mm f/2.8. This complete tripod offers professional photographers and advanced amateurs the strength and stability they need, and its size and the use of A.M.T. alloy make it light and portable.



Berlebach German ash wood tripods (www.berlebach.de) are known for their low vibration and solid support. Ash compensates for the vibrations and is nonconductive, preventing the damaging effects of electromagnetic fields and electrostatic charges. In arctic conditions, you can handle a wooden tripod without having to wear gloves. Then there's the aesthetics factor: Some photographers feel that no other material has the warmth and allure of wood.

Carbon-fiber choices

Gitzo's (www.bogenimaging.com) Carbon 6X tripods reduce overall weight by up to 17 percent and use a six-crossed multi-layer tube that's 30 percent lighter *without* sacrificing strength and stability. Part of lightening Gitzo's 6X tripod legs involves making the standard 1.5 mm carbon-fiber tube *thinner*. By using a six-layer construction, the tubes are 1 mm thick, but are "equally as strong and as stable" as Gitzo's 1.5 mm three-layer carbon-fiber tubes. Their Mountaineer 6X tripods are constructed using a screw thread and adhesive dual-jointing technology called Hybrid Interconnecting System (HIS) for increased ruggedness and durability.

These tripods add an Anti Leg Rotation (ALR) system that allows for fast and smooth setup unlike any other Gitzo tripod Joe has ever used. Gone are the days of fighting to unlock the legs and get them extended. This new system lets you loosen all

Carbon 6X tripods utilize an Anti Leg Rotation (ALR) system that allows them be set up in less than 15 seconds by loosening all the twist locks on each leg at the same time, then pulling the leg down and tightening the twists individually. All Mountaineer 6X tripods are also fitted with an antirotation grooved center column for increased stability.



twist locks at the same time and pull down the leg before tightening them. Bogen Imaging claims a setup time of 15 seconds for a five-section model. The legs are tipped with removable rubber feet that are interchangeable with Gitzo's universal accessories such as the "big foot" series or spikes. The tripod's top castings are corrosion resistant, with polished stainless casting bolts for stability. A built-in, spring-loaded retractable hook on the bottom of the center column provides a place to hang a counterweight, and won't get caught while carrying or packing like the fixed hooks on other tripods.

A well-made carbon-fiber tripod is a lot like a Ferrari Enzo. Both products are made of carbon fiber, people *really* want to own one, but most times they simply can't afford it. Flashpoint's family of tripods and a monopod are priced so the average photographer can afford one.

Both the Ferrari Enzo's body and Flashpoint tripod's legs are made of carbon fiber. Most people can't afford to buy an Enzo, but most people *can* afford a Flashpoint carbon-fiber tripod. © 2003 Joe Farace.



Along with an affordable price tag, Adorama's three affordable Flashpoint carbon-fiber tripods feature classic European styling. Few, if any, carbon-fiber tripods are completely manufactured from this expensive man-made material, and the Flashpoint family is no exception. The top, leg brackets, and fittings are made from lightweight and tough magnesium alloy. Every Flashpoint tripod comes with a wrench for tightening and adjusting the legs, so friction is set just the way an individual photographer prefers.

The Flashpoint tripod family consists of three models that are shown here with their optional ball heads. These are all early production models and Adorama told us that some slight cosmetic changes are to be expected with the final product. What won't change is the rugged carbon-fiber construction and low price. © 2007 Joe Farace.



The Flashpoint tripod line includes the three-section model 1128, which measures 21 inches long when the legs are compressed, making it useful for the landscape and nature photographer who wants something small and light to attach to their camera bag or backpack. Fully extended (*without* the optional head), the 1128 measures 48 inches long, but weighs only 2.64 pounds. The main leg of the three-section Flashpoint 1228 model has a wider diameter than the 1128. At 22 inches long, it's also a little longer than the 1128 and extends (again without the head) to 52 inches. It weighs just 3.30 pounds. The main leg section of the 1328 model has a 1-inch-diameter tube. It uses a four-section design, allowing it to compress to 20 inches and

extend to 57 inches. All Flashpoint tripods have adjustable center sections that add 10 inches to the maximum camera height, and feature a hook at the bottom for hanging a shot bag for extra stability on windy days.

All Flashpoint carbon-fiber tripods have a top plate that features a level bubble for precise setup or when shooting panoramas. The angle of each leg is adjustable to suit a variety of photographic conditions. All you need to do is push a leg in, slide out a metal tab, and the leg will move past its stop and be placed at any possible angle for low-level and macro photographs. The tips of each can be set up with either a rubber tip for working indoors or a spike when working outdoors.

How steady can a lightweight tripod be? This photograph was made with a Pentax K10D mounted on a Flashpoint F-1328 tripod with a KK-3 ball head. Exposure was *five seconds* at f/11. No Star filter was used; you'll get those kinds effects when using small apertures and long exposures. © 2007 Joe Farace.



Legs and feet

Tripods have three legs and the legs themselves come in different numbers of *sections*. A tripod with three or fewer sections is typically stronger, steadier, and less expensive than one with *more* sections. When backpacking, tripods with four or more sections may appeal to you, but although they are compact, they may not be as rigid.

There are many kinds of tripod legs. The tubular style is strongest because a metal wall completely surrounds the leg. The open side of the channel leg often used in inexpensive tripods can be attractive, but this type of leg is weaker and easily twisted. Some professional tripods use square legs closed on all sides for strength, but retain the aesthetics of the channel leg. The size of the leg has an effect on stability. The larger the diameter, the stronger the leg, but crutch-style legs provide extra stability without extra weight, and have always been popular for pro video tripods.

Round legs generally have threaded collets that can always be tightened enough to lock the legs in place. Tripods with channel legs typically have locking levers. These levers are easy to use, but can wear out faster. Manfrotto's legs use rapid-action lever leg locks that easily snap open or lock, which can be especially handy when working outdoors in cold weather, when collets can be sticky and difficult to open with gloved hands.

Joe has a love/hate relationship with tripod leg locks. On one hand, he likes the precision of flip locks à la Manfrotto; on the other hand, he likes the traditional twist locks that Gitzo, Flashpoint, and others use. All Flashpoint carbon-fiber tripods have rubber double-grip twist locks that allow the legs to be tightened whatever the outside temperature may be. Even under frigid, wintry Colorado conditions, Joe has never had a problem locking or unlocking any of the legs. He attributes that fact to the thermal properties of the carbon-fiber legs around which the locks are wrapped.

Some tripods feature leg braces that extend from the center column to each leg. This type of construction prevents the legs from closing when you don't want them to. Braces make the tripod heavier and more difficult to fold quickly, but they add to overall rigidity, although this additional rigidity may not be necessary if the leg diameter is large enough.

There are as many different kinds of tripod feet as there are sneakers for *your* feet at the local Foot Locker store. The most basic foot is the crutch tip, a rubber cup that prevents metal legs from scratching the floor. Some tripods feature rubber tips for wooden and other slippery surfaces, plus a retractable spike for outdoor use.

Heads and columns

Some manufacturers offer a choice of leg and head types, allowing you mix and match. You may even want to use one manufacturer's head on another company's legs. There are basically two different types of tripod heads—ball or pan—with variations in between. Ball-head aficionados tell you their favorite is quick, easy to use, and you don't have to turn different levers to move it where you want. Pan-head folks say it's easier to level the camera or follow movement. Try both and pick the one *you* like. Camera stores tell us that they sell an even number of ball versus pan heads. Make sure the head is appropriate for the camera. The larger the platform, the more securely the camera can be seated and balanced. A larger head also provides space for positive-locking mechanisms.

For years, Joe was a big fan of the traditional pan/tilt heads because he felt that this design provided more precision when

composing a shot. Others—including his wife, Mary—preferred ball heads because they were easy to use, fast to set up, and didn't take up a lot of space with gawky handles and levers. The downside of ball heads is that these precision devices were usually more expensive, and sometimes you needed to purchase an optional QR (quick-release) shoe/plate to attach your camera to the head.

Manfrotto's 804RC2 head uses a new high-performance polymer, known as Adapto, that's comparable to aluminum in strength, but is 50 percent lighter. The low profile of the 804RC2 features a spirit level and a fixed counterbalance spring on the tilt motion to help support varying equipment loads of up to 8.8 pounds. The fixed counterbalance spring helps prevent a front-heavy camera from crashing forward when released. The spring also makes it easier to tilt the camera to the right position without struggling with that extra weight.



Although you can attach any tripod head to these carbon-fiber tripods, the optional Flashpoint ball heads, such as the KK-3 shown mounted on the model 1328, are an ideal complement. These ball heads are exceptionally well made and the prices are a bargain. The Flashpoint tripod center section uses a collet-style locking/unlocking mechanism for raising and fixing the center section. What you *can't* see is the hook at the bottom to attach a shot bag for extra stability. © 2007 Joe Farace.



Ball heads are compact and feature a knob or lever that locks and unlocks the ball mounted under the camera platform. By unlocking the ball, you can move the camera freely in any direction. A variation is Bogen's Grip Action ball head, which uses a pistol-grip style that lets you position your camera anywhere within a 180-degree sphere. A pan head usually has two or three levers to control forward and backward motion, plus the ability to change from horizontal to vertical. Two-lever models make you reorient the camera for vertical or horizontal photographs, but some provide flexibility by using a small lever for this flipping action. Each movement of a pan head requires locking that movement. Unlike a ball head, one axis can be adjusted at a time. This can be especially important when doing architectural photography.

Flashpoint's magnesium-alloy ball heads feature a micrometer-marked base with rubber-gripped adjustment knobs and a quick-release shoe for attaching your camera. Controls include a pan lock knob for holding the head in a horizontal position and *two* friction-adjusting knobs. The larger one will lock the head in place at any angle. The smaller knob provides for fine adjustments without having to completely loosen the ball and reframe your composition all over again. There's a fourth control at the top on the QR base for locking the plate and in turn locking the camera in place.

For photographers who need to change cameras quickly, a quick release is an important accessory that's built into some heads, and allows the camera to be removed without unscrewing it. This is usually accomplished by screwing into the camera's base a *foot* that slips into a *shoe* in the head—although Hasselblad builds a foot into their cameras, making a QR attachment a must for users of these cameras. Just as important is camera *placement*, which can be assisted with accessories such as Adorama's Macro Focusing Rail Set. This precision device provides for fine-focusing adjustment and has two rails for allowing movement in *four* directions. Novoflex (www.hpmarketingcorp.com) also offers a series of precision focusing racks for use on tripods or copy stands.

Adorama's Macro Focusing Rail Set is specifically designed for tripod-mounted macro photography and has a smooth rack-and-pinion movement that provides extremely fine focusing adjustments. The Macro Focusing Rail Set has two 6-inch rails that allow precise movement in four directions and has positive-locking knobs to assure rock-steady focus.



The most common type of center column is the lift type, which uses the photographer's arms to raise and lower it. Locking is provided by a screw lock or collet. With a geared center column, a crank is used to raise or lower the column. This provides precision in raising or lowering the column but is slower than the lift type. Check to see if the gear teeth are sturdy enough for your camera. Some professional tripods use a clutch system, which provides a combination of lift and crank types. The center column is unlocked by depressing a spring lever that's automatically locked when the lever is released. Some kind of friction control is also important. If you've ever had a camera come crashing down, you know what we mean. The tripod should have some type of control that adjusts to the weight of the camera so the camera remains balanced even when unlocked.

The tripod bottom line

A good tripod protects the investment you've made in expensive optics by delivering the best possible photographs. Good tripods



This abandoned church in the ghost town of Dorothy, Alberta, Canada was photographed by Larrie Thomson during a long tripod-mounted exposure illuminated mostly by moonlight. Larrie says, "It is possible to walk through the frame while the film is exposing, provided you don't stay in one place for too long. This makes it possible to enter and exit buildings to add lighting from *within*." He captured this image by the light of the full moon, with interior lighting added using a flashlight and amber gel with an exposure of eight minutes at f/5.6. For this specific shot, he exposed Kodak EPT 160 ISO tungsten slide film, but you could achieve the same effect using an ISO setting of 160 and a Tungsten or Indoor Color Balance. (See Chapter 4.) © Larrie Thomson, www.nightphotographer.com.

aren't cheap, but that doesn't mean there aren't some bargains. Because 90 percent of sales of top-of-the-line tripods are to photographers unsatisfied with their old tripod, check the tripod's construction. Does it lend itself to simple and inexpensive repairs? All of these factors add up to a tripod that will give years of service and improve your photography at the same time. And that's not a bad combination.

Monopods

Sometimes you encounter situations when you can't carry a tripod, or there's just not enough space to use one. That's where a *monopod* really comes in handy. If you're shooting sports, a monopod is especially useful when working with long lenses in the tight spaces to which sport shooters are often assigned. If you're photographing from the stands, a tripod can interfere with the spectators, but a monopod won't. For nature photographers and backpackers, where space and weight are at a premium, monopods are an ideal solution. But let's face it, a monopod is just a *stick*. It's a stick that has to hold your camera securely, for sure, but still a stick.

Monostat of Switzerland's (www.monostat.us) RS16 Professional monopod takes a slightly different approach, but starts with the basics. The RS16 has a three-section design with the ubiquitous twist locks and weighs 1.3 pounds. It's made of light-weight but strong aluminum, extends to a maximum height of 61.8 inches, yet can be compressed to 2 feet and attached to your camera bag or backpack. What sets this monopod apart from the rest is its *foot*. Unlike typical monopods that have a rubber or spiked foot, all Monostat monopods use a flexible Rotation Stabilizer (a.k.a. foot). This design is stable along vertical and hori-

Another example of a monopod's usefulness: Have you ever tried following a butterfly around on its busy schedule in a field of pokey weeds? Imagine adding a tripod to the equation! This delicate creature stayed on the weed long enough to be photographed with a 300 mm f/4 lens coupled to a 1.4X teleconverter. © 2005 Barry Staver.



A monopod is a *necessity* when working with a large, heavy lens such as Canon's EF 500 f/4. A tripod is just not practical in such fast-moving situations. This race car was photographed at Laguna Seca Raceway with an exposure of 1/320 sec at f/10 and ISO 800. The picture is so sharp you can see the driver's eyes clearly through his helmet visor. © 2004 Joe Farace.



Flashpoint's carbon-fiber monopod is 19 inches long when closed and extends to 58 inches. Its 10-ounce weight makes it a good choice for sports and nature photographers who work with long-focal-length lenses and don't always have enough space or time to set up a tripod. The three-section Flashpoint monopod has a 1-inch diameter main tube and a foam grip over the main portion. The top of the monopod (and all the Flashpoint tripods too) has a reversible attachment for mounting a camera or tripod head.



zontal axes, and is grippy on normally slippery surfaces including tile—and even on ice, which we have a lot of in Colorado.

Whereas Joe prefers the three-section Professional model, some pros might prefer other configurations in terms of length and number of sections. The RS16K All-Round is a four-section monopod that extends to 61 inches, but can be retracted to 19 inches. It weighs 1.3 pounds and is available in matte aluminum

The foot of Monostat of Switzerland's RS16 Professional pliable design has more in common with a snowshoe than with a suction cup and is safe for use on those polished and expensive wooden floors—even ice! © 2007 Mary Farace.



or black. The RS16SK Compact is a five-section monopod that measures 16.5 inches, but extends to 57 inches. Taller shooters will prefer the RS16SL X-Long, which is 21.25 inches long, but extends to 75.5 inches.

Monopods can be used with the same type of heads as a tripod, but are typically used *without* any head, and are easily tilted to get the perfect angle that the ball-head-style RS foot accommodates nicely. All Monostat-RS monopods have a reversible $\frac{3}{8}$ -inch and $\frac{1}{4}$ -inch mount that can be screwed into your camera's base or the tripod collar found on long-focal-length and zoom lenses. The monopods come with a surprisingly nice,

Monostat has chosen to use the old-school twist-lock legs because, they say, twist locks can always be tightened whatever the temperature. Joe would have preferred a softer, grippier rubber on the twist locks rather than Monostat's wide-tread design, but he can see that their wider grooves are less likely to get filled with snow or mud when the going gets sloppy. You should be using gloves in these situations anyway, so maybe it won't matter much.



lined carrying case and have a two-year warranty. Like all monopods, they're still just sticks, but these precision, Swiss-made monopods with their unique foot design *are* something special.

The Pod

Tripods are useful but take space. On the other hand, the beanbag-like Pod (www.bogenimaging.com) easily fits inside a jacket pocket or camera bag when you're hiking. The Pod is available in three different colors and sizes. I've been using the Red Pod, which weighs 0.75 pound, measures 5 inches in diameter, and is 2 inches thick. The smaller Yellow and Blue Pods weigh 0.4 pound, measure 3.75 inches in diameter, and are 1.75 inches in width. The Blue Pod is designed for cameras or camcorders with off-center tripod mounts.

The Pod uses the standard 1/4-inch camera-mounting screw and is covered with water-resistant, industrial-grade nylon. It has a nonmarking, nonslip base, and won't scratch or mar surfaces.



Joe photographed his hotel in Laughlin, Nevada at night. The hotel sits on the river, but the river is visible only on the other side, so he created his own river using Flaming Pear Software's Flood Photoshop-compatible plug-in (www.flamingpear.com). Not only did it add "water," but the effect also hid all the cars in the parking lot. The image was captured with a Leica D-Lux 2 that was supported by a red Pod placed on top of a trash can in the parking lot. Exposure was 1/10 of a second at f/3.2 at ISO 400. © 2006 Joe Farace.

Panorama heads

One of the best ways to shoot panoramic images is with a panorama head. Novoflex has long made a series of what they call panorama plates, and the rest of us call panorama heads, although they really are closer to being a *plate* than a *head*. Like all support-related products, the Novoflex Panorama = Q and Panorama = Q Pro are media passive, not digital specific, so you can use either one with a film camera or a digital SLR.



Here are four of the five images used to create the five-shot panorama of the exotic-car showroom. As you can see here, frames should overlap by one-third or one-fourth, but you should always check as you pan to the next increment to make sure you have sufficient frame overlapping between shots.

The freely rotating Panorama = Q has two 180-degree scales with 10-degree markings and an integrated spirit level to help maintain exact horizontal adjustment of the camera. A handy knob lets you accurately lock the camera into any desired position. The integrated quick release is part of Novoflex's Q = Mount System, and takes some getting used to, but is surprisingly effective.

The Panorama = Q PRO name reveals the professional orientation of this panorama plate. A blue adjustment knob enables you to choose from eight different click-stops and the numbers on the knob are the number of detents in a full circle. If you do not want *any* detents, turn the knob counterclockwise to 36 and use the smaller gray knob along with the 360-degree scale to lock down the camera, in effect turning the Pro unit into a larger version of the free-rotating Panorama = Q. Otherwise you can choose between the following adjustments: 6x click-stops in 60-degree steps, 8 stops in 45-degree steps, 10 stops in 36-degree steps, 12 stops in 30-degree steps, 15 stops in 24-degree steps, 18 stops in 20-degree steps, 24 stops in 15-degree steps, or 36 stops in 10-degree steps. Keep in mind that the *number* of steps is based on what it takes to produce a 360-degree series, not just the three to five shots that most panorama photographers want, but it's there if you need it.

A special cross spirit level guarantees accurate adjustment of the camera and using it to level the camera is the first step in creating a panorama. Both panorama plates are compatible with most tripod heads. Joe prefers using it with the Tiltall's flat mounting surface and using its two adjustment handles to make leveling a snap.



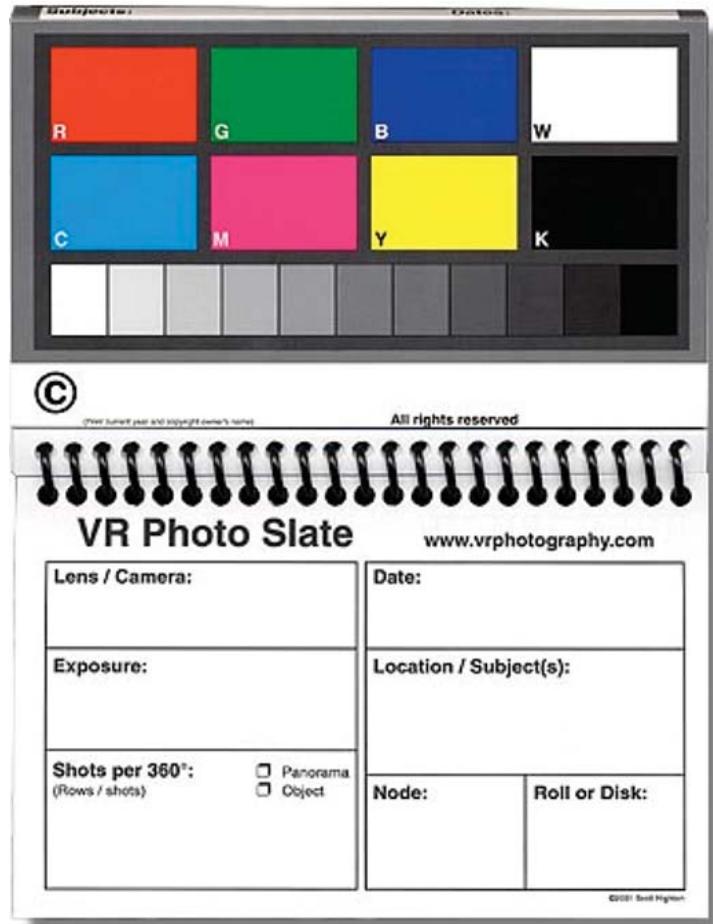
The Panorama = Q PRO also uses Novoflex's Q = Mount System. Loosen the knob opposite the blue "panorama" knob and slide off the camera attachment. Next, you'll need a screwdriver to attach the Q = mount to the base of your camera, but in the field, a Swiss Army knife will work perfectly for the job. Slide the mounted camera back on, tighten the blue knob, and it's secure. It lacks an arrow showing which way the lens should face, as in Manfrotto's QR system, and that's important so your camera doesn't cover the level. If you make sure you can read the Novoflex name on the mounting from camera position, you'll be O.K. If it covers the levels, turn the camera 180 degrees. This may not be as fast to quick mount as some others, but there's no doubt that once attached, the camera's not going anywhere.

Shooting an indoor panorama has its own set of challenges. Let's take exposure. You have to shoot in Manual mode because any of the camera's Auto modes will try to optimize an individual frame, and when the images are combined using Photoshop's Photomerge (File > Automate > Photomerge), they won't match. The same is true for Color Balance. Auto White Balance normally works great, but having five shots, each perfectly color balanced, won't work in most indoor settings. Then there is the question of how many segments to shoot.

The \$18.95 Virtual Reality Photography Slate Book (www.vrphotography.com) is indispensable for this kind of photography. It measures 4 × 6 inches, so you can keep it in your pocket. A VR Photo Slate page and the fold-over cover color target can be photographed as the first frame of your sequence under the same lighting conditions of your subject. The color target will give you a reference for color corrections in postproduction and the slate information provides a reference for stitching and any other assembly information. The book includes focal-length/field-of-view chart, hyperfocal-distances chart, and a grayscale/rectilinear-correction chart.

The angle-of-view chart is based on a full-frame SLR. If your digital camera has a smaller sensor, just apply the camera manufacturer's multiplication factor to the focal length of the lens

The Virtual Reality Photography Slate Book (www.vrphotography.com) is indispensable for panoramic or VR photography. It measures 4 × 6 inches, so you can keep it in your pocket.



you're using. If you're using a 24 mm lens and have a 1.5X magnification factor, you multiply the 24 mm by 1.5 to get a 35 mm equivalent and look up 35 mm on the chart. Because Joe was shooting with an EOS 5D, the angle of view on the chart told him how many shots were needed for a 360-degree circle, including the required overlap. You turn the Panorama = Q PRO's blue knob to select how many increments you want to shoot, but because this number is for a 360-degree set, you may want to shoot less.

One rule about overlap is that frames should overlap by one-quarter or one-third and that's what the chart's recommendations seemed to produce. Joe made some tests and actually shot at settings more or less than what was suggested. Always visually check your calculations when shooting. Look through the viewfinder or the LCD preview screen (a preference if you have a big screen) as you pan to the next increment, making sure you have one-quarter to one-third of the frame overlapping

between shots. *Tip:* Make sure the Panorama = Q PRO is tightly mounted on your tripod head. If it is not, the plate can shift when you move it from one click-stop to another, ruining the sequence and requiring that you start all over. Initially, the plate was stiff when moving from detent to detent, but it seemed to warm up after being inside a cold car trunk and the motion between indents became silky smooth.

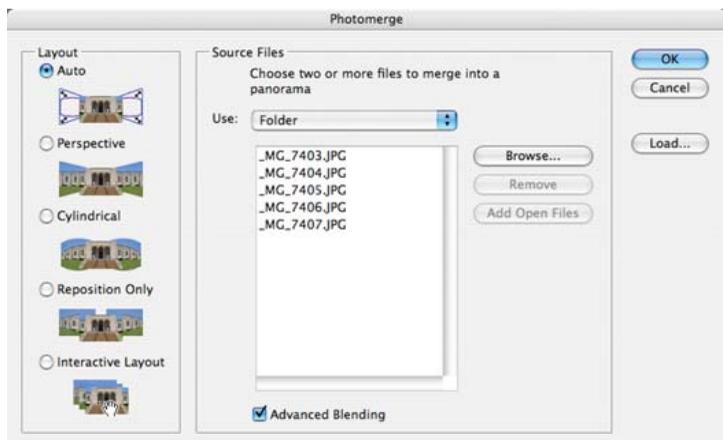


This is a five-shot panorama made with the EOS 5D in Fluorescent White Balance mode that produced clean color in a mostly fluorescent environment. Exposure was 1/8 sec at f/9 at ISO 6540. Lens was Canon's EF 22–55 mm f/4.0–f/5.6 zoom at 29 mm. © 2006 Joe Farace.

Postproduction

There are more different kinds of panorama software available than there are panorama heads, but for the images made with the Novoflex plate, Joe used Adobe Photoshop's Photomerge function. This uses the program's Auto Align Layers function to make quick work of assembling the panorama. PhotoMerge's dialog box offers five different ways to align images: Auto, Perspective, Cylindrical, Reposition-only, and Interactive Layout. You can select a folder of images, and even though the images were shot right to left instead of left to right, Photomerge assembled them left to right and lined them up perfectly with one click. Sure, it took a while, because these were large JPEG files shot with a Canon EOS 5D, but the result was still *perfect*.

Photoshop CS3 Photomerge dialog box offers five different ways to align images: Auto, Perspective, Cylindrical, Reposition-only, and Interactive Layout.





Joe set the Color Balance to Daylight for this three-shot panorama of the Westminster, Colorado City Hall that was decorated for the holidays. Exposure was 0.5 second at f/5.6 and ISO 200. Lens was the EF 22–55 mm f/4.0–f/5.6 zoom at 55 mm. **Tip:** When you are leveling the camera, you may need to raise the tripod to its fullest height. © 2006 Joe Farace.



Because sometimes you have to photograph the landscape you have, not the landscape you want, Joe decided to shoot this one in black and white using the Canon EOS 5D's Monochrome mode. Base exposure for the four shots was 1/100 sec at f/22 at ISO 200. He used his favorite cheapo pano lens, the discontinued EF 22–55 mm f/4.0–f/5.6 zoom at 55 mm. © 2006 Joe Farace.

Alternate supports

If you're caught without a tripod or monopod and need stability, there are lots of options within reach. A person can easily become a human tripod. By standing with feet spread apart, elbows tucked into the abdomen area, cradling the camera with the hands, you can form a basic tripod. Slow, deliberate,

This candlelit memorial was on the front counter of an office. In respect for the young man whose death was being mourned, Barry asked permission to take the photograph while on assignment for the Colorado Health Foundation. With permission given, he quietly braced himself as described above, cradling the camera with elbows in tight, feet apart, tripping the shutter release as he slowly exhaled. © 2005 Barry Staver.



Some subjects require a delicate approach—or, shall we say, a keep-your-distance approach. Barry didn't want to take time to set up a tripod, let alone attach a monopod to his camera. He stayed in his car, rolling the window down, bracing the 300 mm f/4 lens on the window ledge of the driver's door. The final steadying touch: turning the engine off to eliminate an obvious source of vibration. © 2005 Barry Staver.



deep breathing will further aid in stabilizing the camera. The human tripod gains even more support when you sit down and place your elbows onto the top of your legs. If possible, lie on the ground with your elbows resting on the ground. Walls, trees, and large rocks all become good supports to lean against. Good stability can be found on adjacent flat surfaces. Set the camera down, activate the self-timer, or gently press the shutter release.