

Off-Camera Flash

If this series is focused on macro and close-up photography, why do I keep writing about flashes?

A reasonable question. Here's what I'm thinking:

My camera's sensor is **noisy**. Not just a little. When I use an ISO greater than 80, I start seeing levels of noise that make the image objectionable to me. I realize that not everyone is as much of a stickler as I am.

As the magnification of a lens goes up, the depth-of-field (DOF) that is in focus goes down. This can be offset somewhat by closing down your camera's aperture, which brings back some DOF. But there's a price: with a smaller aperture, less light gets through the lens and onto your camera's sensor. So a flash is often helpful to bring some light back into the scene, while still allowing you to shoot with a lower, less noisy ISO.

Once you've decided that using a flash is worthwhile, learning to use it off-camera is a great investment into your photos.

Why Off-Camera?



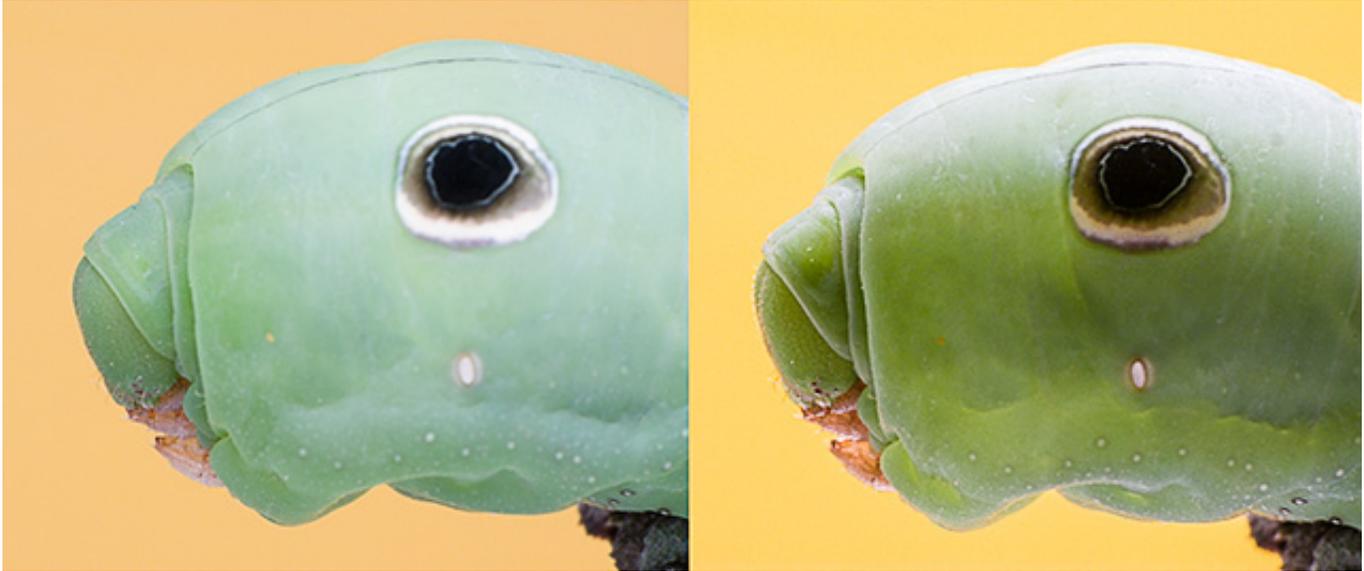
In macro photography, it's not uncommon to have the end of the lens just a few inches from your subject. If you're using a telephoto lens to do that, it's entirely possible that the lens will cast a shadow onto the subject when you use the camera's built-in flash. Not an ideal situation.

There are aesthetic reasons for moving the flash off the camera, too. How often in real life do you see things lit as though you have a spelunker's headlamp on your head? I guess it's most common when you're driving a car at night and manage to catch someone or something in your headlights. It's not really the most flattering light, is it? All of the surfaces that are facing your eyes are pretty uniformly lit, with hotspots because the source is small and far away.

Moving the flash off of the camera allows you to take artistic control of the light direction. Also, it helps to define the curvature of the illuminated subjects. Our brains are able to interpret an object's shape by the way that light and shadow is distributed across its surface. That means that the 3-dimensionality in our photos will be better perceived by viewers when we help them out by moving the source of light away from the axis of the lens.

Examples

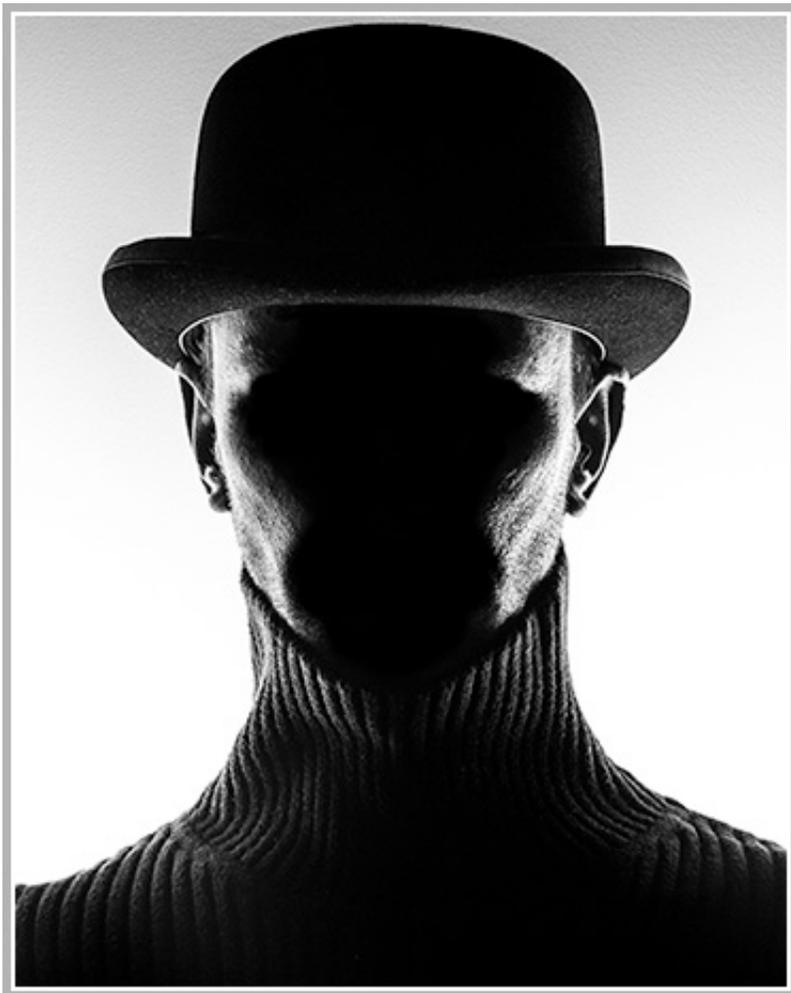
Here are a few shots of a caterpillar that I took yesterday. In both cases, the shot on the left is with the camera's built-in flash, without diffusion. On the right is a shot with a single, off-camera, diffused flash.



Notice that in the images with the camera's built-in flash, the curvature of the caterpillar is not nearly as pronounced. The markings of it appear fairly clearly in both versions, with the flash on or off-camera, but with the flash off-camera, the curvature is highlighted as I chose. I could as easily have lit it from the left, or completely from

behind for a silhouette. Also, once I have the means to trigger a flash that is off-camera, triggering more than one flash becomes an option.

Here's an example with 2 flashes placed behind me, bounced off of some white foam-core board on either side of me. The flashes illuminated the wall behind me and the sides of my body, but almost not at all on the front of my face (I admit that I edited out the little bit of light that did creep onto the sides of my nose and around my eyes, but most of the work was done with flashes).



How to Do It — The Flash

There are several techniques for getting your camera to tell an external flash that it should fire. The first thing you'll need for any of these to work is an external flash. I

have a couple used Nikon SB-25 flashes, which were introduced in 1992. They were made recently enough that I don't have to worry about the trigger voltages in them frying my camera if I decide to actually attach them to the camera. I went the used route because, A) I don't have a lot of cash, and B) I wanted to see if I could do something interesting with flashes before spending lots more money on it.

Knowing what I know now, I'm interested in getting one or more LumoPro LP180 Speedlights. I haven't used one, but David Hobby (aka Strobist) has, and [his review of it](#) is excellent. There are many suitable flashes—try doing a search on Google for “strobist flash.” But whatever flash you choose, you'll need some means of getting the camera to tell it when to pop.

How to Do It — Other Gear

There are 3 main ways to communicate between camera and flash. There are pros and cons to each approach, and different levels of expensive involved. They are:

- A wired connection from the camera to the flash.
- Using the camera's built-in flash to trigger a “slave” flash optically.
- Using radio-frequency signals to trigger the flash.

Wired Triggering





This is in many ways the simplest and least expensive approach to triggering an off-camera flash. It requires only that your camera have an external flash mount. (Don't worry — the next technique will work for those without a flash mount on their cameras!) You need an adapter that will connect to your camera's flash mount (also called a "hot shoe") and an identical one that connects to your flash. You'll also need a cord that is compatible with the adapters.

There are two main types of cord in use: a 3.5mm Mini Cable, which is a mono audio jack with the small plugs; and what's called a PC Cord. The great thing about the Mini Cable is that the cords are commonly available in many lengths. Just get one long enough to accommodate your shooting scene, and you're good to go. Or get several and use whatever is appropriate to the task at hand. The PC Cord is more likely to connect directly to a flash without needing an adapter, but since many of the adapters are sold as pairs for not much money, I would go with the Mini Cable option in order to make cord replacement easy.

The benefit of using this approach is that it is pretty much 100% effective, assuming that you've got everything connected so that the contacts are good. With the optical approach and with some of the lower-end radio frequency transmitters, you occasionally take a picture and the flash isn't triggered. The downside is that if you're shooting in bushes, trees, etc., the cord can become entangled. But this is probably the least expensive approach that gives you the opportunity to try out off-camera flash. It's good for determining if this is something that you want to pursue without investing a lot of cash.

A word of caution for Sony users: Sony’s hot-shoe design is different from that used by Canon and Nikon, so an adapter that will work for those will not work for Sony. You’ll have to be certain when you search for one that it’s Sony compatible. Or you can get yet another adapter that converts the Sony hot-shoe to a Canon or Nikon design.

Optical Triggering



This approach is the only option available for people whose cameras don’t have hot-shoes. What happens is that you set your camera to fire its flash. A photoreceptor in your off-camera flash (this flash is called the “slave” flash) detects the camera’s flash and fires the slave.

What about the light from your camera? Won’t that affect the scene? There are few things you can do: block the light from the camera flash so that the slave can still see it, but it doesn’t hit the scene; or, use the camera flash at a low setting, so that it isn’t the primary light in the scene, but keeps the shadows from being absolutely black. Essentially, you’re using the camera’s flash as a fill light.

Some flashes have a built-in slave mode support. In fact, some flashes are only intended to be used as slaves — they can’t connect to a camera at all. My old Nikon SB-25 **does not** have a slave mode, but its sibling the SB-26, does. Getting a flash with a built-in slave mode means that you don’t need to buy the adapter.

One possible shortcoming of this approach is that the ambient light (usually direct sunlight) can interfere with the photoreceptor’s ability to perceive when your camera’s flash fires, causing a flash failure. I don’t use this technique, so I can’t report on how often this problem occurs. I would imagine that in shaded settings, even outdoors, that this is not a huge problem, but it’s worth keeping in mind.

Radio-Frequency Triggering

The final method of triggering an off-camera flash is with radio-frequency triggers. A transmitter is mounted to the camera's hot-shoe, and receivers are attached to each flash that will be used. When the camera fires, the flashes are triggered via radio signal.



RF Triggering is the solution I use. I decided go into it that I didn't want to deal with a cord getting tangled in bushes. There are a wide range of products available for this solution, with varying rates of success. The Rolls Royce solution is the Pocket Wizard. It's the choice that full-time pros use. It's reputed to be completely reliable, with the triggering occurring every time you take a shot. It's a transceiver, which means that each unit can act as a transmitter or a receiver, depending on how you set it up. It has 32 channels of communication, which means you can (if you have enough flashes and Pocket Wizards) set up multiple lighting setups on different channels and switch between them from the unit attached to you camera.

This is without question the way to go if you need 100% reliability, or if you want to get a model that can pass TTL (through-the-lens) info from your camera to your flash in one of your camera's auto modes, or if you want to be able to adjust the brightness of your flashes without having to walk over to them. But there are other

options available.



I'm not a wealthy guy, so rather than go with the Rolls Royce, I went with a much less costly, slightly less reliable, but well-reviewed and perfectly adequate solution: the Cactus Wireless V5 transceivers. These function pretty much identically to the Pocket Wizards. They're not available in as many models with as many options (for example, some models of Pocket Wizard can control your flash settings from the transceiver unit), but to just trigger my two flashes with a minimum of fuss they work beautifully. And I got 2 of them for less than the cost of a single Pocket Wizard.

In Conclusion

There are many ways to get your flash off of your camera. I encourage you to give it a try. It's probably the most significant change you can make to the appearance of your photos with the camera that you already have. I know that I've covered a lot of info in a pretty small space here. If you have questions, use the comments area, either here or on the [Point and Shoot Macro Closeups](#) page on Facebook.

Note: While I link to particular products in this article, I'm not trying to endorse or recommend those particular products. I'm trying to show you where something like what I discuss is available. You need to do some research, verify that what you want will work with your gear, and make a choice that works with your goals and with your budget. Remember, you can always upgrade.