Using Filters to Make Great Photos

Discover a variety of filters with side by side examples by Tamron Pro Photographer Jeff Allen

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Jeff Allen *is a member of Tamron's technical team. He travels the country extensively helping people to choose equipment that's right for them and speaks with novice and photo enthusiasts on how to improve their photographic capabilities.*

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Filters can transform your images and expand your photographic vision.

There is no denying that the explosion of DSLR photography and growth of Photoshop, Lightroom and various other image editing software have expanded the creative options available to many photographers. Each of the editing programs and their various plug-ins allow incredible freedom of expression for photographers who may never have considered the artistic opportunities of image manipulation and color correction.

But long before there were all these post-processing options, photographers were manipulating and improving their images through the magic of filters. From skylight and polarizers to neutral density to special effects, on-camera filters can transform your images and expand your photographic vision. Through the next few pages, we are going to show why every DSLR photographer should have a few filters in their bag on every shoot.

Filters attach to your camera lens in one of two ways. There are the round, screw-in filters which are the same size as your lens diameter and screw directly onto the front of the lens. If you only want to use the filter on one lens or on lenses which are all the same size thread, then these work well. If you own a variety of lenses and want to use your filters with all of them, you have a couple of options. You can buy filters for the largest diameter lens you own and then purchase step rings to use the filter on smaller diameter lenses; or choose a square (or rectangular) filter system. Either of these choices use adapters for various lens diameters that attach to a holder on the front of the camera lens so you only have to buy one set of filters and can have as many inexpensive adapters as you have lenses.

UV and Clear – The Essential Filters

A long time ago, a very wise photographer once told me, "A protective filter is the least expensive and best insurance policy you can buy for your gear." And his advice has saved my equipment more than once.

UV and Clear filters are used mainly to protect your lens from damage, minimizing the dirt, dust and water that can get through to the front element of your lens. This is one type of filter that you should probably have as a screw-in type so it can do what it does best – protect your lens! Make the investment in a good quality "digital" or "multi-coated" filter for each lens.

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Side by Side Examples in this eBook:

Polarizers – The Color Boosters
Neutral Density – The Landscape Photographer's Secret
Close-Up Filters – Capturing the details
Creative, Special Effects and DIY Filters – Making Magic

Polarizers – The Color Booster

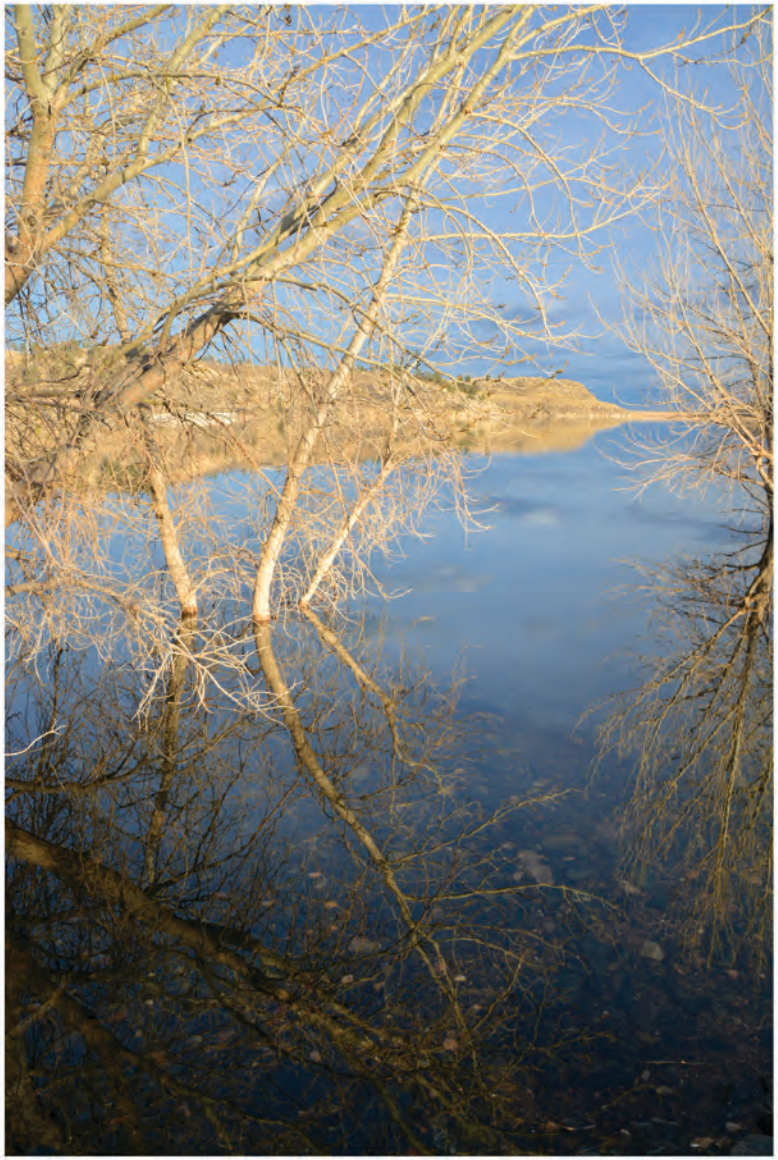
Polarizing filters are the easiest way to boost the color in your images. Simply stated, they increase the color saturation and reduce reflections in any non-metal objects. Just like polarized sunglass lenses, the filter will increase color saturation and create greater contract between the sky and clouds in your images.

Polarizing filters are on a rotating ring so that you can adjust the amount of the effect as you turn the filter in front of the lens. The filter effects will be most obvious when you are at right angles to the sun rather than with the sun directly in front or behind you while shooting. You may have to rotate the filter more than once and in small increments until you find the exact result you are looking for in your image.

All modern auto focusing cameras and digital cameras should use circular polarizers instead of linear ones that were often used with film cameras. A linear polarizer doesn't allow the auto-focus sensor to operate properly.

REFLECTION REDUCTION

LENS USED:
16-300mm Di II VC PZD Macro
Focal Length: 16mm



Without Polarizer (Exposure F/16, 1/30 sec., ISO100)

With Polarizer (Exposure F/16, 1/15 sec., ISO100)

SKY AND COLOR ENHANCEMENT

LENS USED:
28-300mm Di VC PZD
Focal Length: 28mm

Without Polarizer (Exposure F/11, 1/160 sec., ISO200)

With Polarizer (Exposure F/11, 1/80 sec., ISO200)

The simple-looking piece of gray or opaque glass also known as the Neutral Density filter is a go-to tool for many landscape photographers. Admiring a photograph with an incredibly intense sky full of powerful clouds and incredible foreground detail? The photographer probably used a graduated ND filter to create the image. One of the easiest types of filters to use, ND and ND grad filters create effects that cannot be duplicated digitally with a single digital exposure. Although by using image averaging in your digital editing software, a similar effect can be achieved.

There are three general types of Neutral Density filters – single density ND filters that are a consistent shade of gray over the entire piece of glass; Graduated ND filters, which go from dark to light; and the recently introduced Variable ND filters which rotate like a polarizer and give the photographer the ability to vary the amount of neutral density from one to eight or ten stops just by rotating the filter, much the same way a polarizer rotates.

Neutral Density filters reduce the amount of light entering the camera, which enables a longer exposure time than would normally be possible, allow larger apertures to produce a more shallow depth of focus in very bright light or create a sharper image. ND filters have a designated numbering system that corresponds to the filter's strength in f-stops. For example, a #2 ND filter would be a two f-stop difference, which is equal to four times less light reaching the lens. Different brands of ND filters may vary but the most common ND filters sold are 1-stop, 2-stop and 3-stop filters. To blur motion, you can even use a 10-stop or 13-stop filter.

Although ND filters appear gray to the human eye, the image will not have a gray cast to it. They do not affect the image's color in any way. The camera's metering system will automatically compensate by letting in more light. However, the viewfinder will still appear very dark so it is best to compose the image prior to putting the filter in front of the lens. Remember to use a tripod for best results, as your shutter speeds can be reduced dramatically. It's probably best to shoot in aperture priority, "AV" mode, or manual exposure and vary the shutter speeds with a consistent aperture, to maintain depth of field.

Graduated ND filters allow photographers to darken part of the image, often used when a photographer wants to darken the sky but leave the foreground as it is. There are different types of ND grad filters. Some have a "hard" edge to the gradation while others are a softer fade from dark to light. Graduated ND filters come in screw on and the square/rectangular styles. Best results and the most versatility will probably come from the square or rectangular type as you can better adjust the filter to the horizon or break line than with the screw-on type where the fade to clear usually happens right in the middle of the filter.

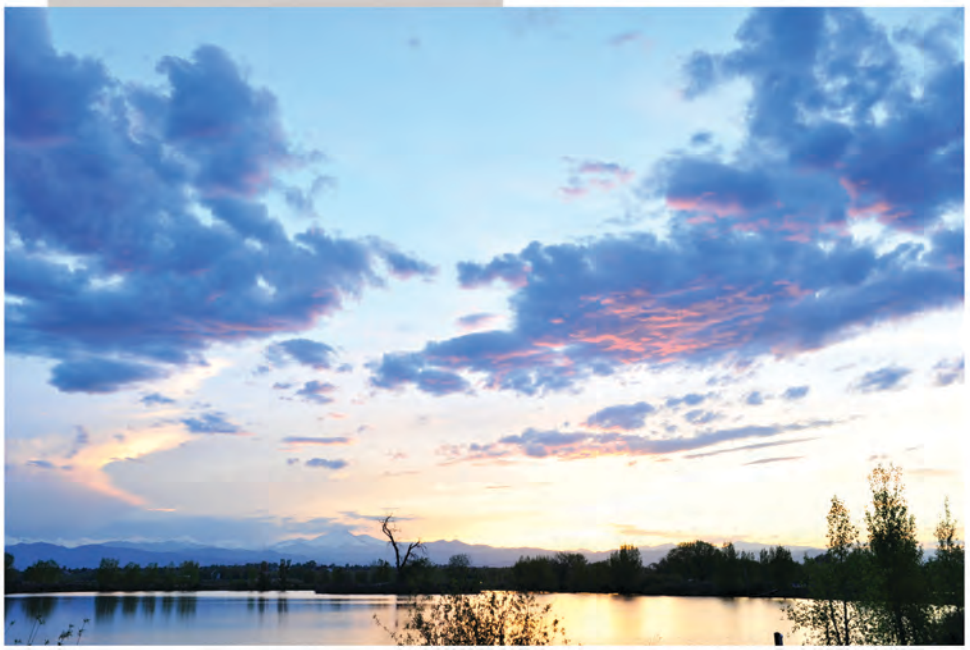
Variable Neutral Density filters allow photographers ultimate flexibility because with one filter the density can be altered from one stop to eight or more just by rotating the filter – essentially replacing several filters with one. While Variable ND filters are a little more expensive than typical ND filters but the versatility negates the added expense for many photographers.

It is possible to stack ND filters for additional effects but stacking too many increases the potential for creating a vignette around the edges, increases the potential for chromatic aberration, and a loss of sharpness in the image. That's why the variable ND filters have become an instant hit. Less additional glass on the lens means the potential for better sharpness since you won't be stacking filters and may cost less than buying several individual filters. Choosing a variable ND also means less weight and space used in your camera bag.

GRADUATED NEUTRAL DENSITY 6 (3 STOPS)

LENS USED:

28-300mm Di VC PZD
Focal Length: Left 38mm / Right 50mm / Next page 155mm



Without filter (Exposure F/8, 1/25 sec., ISO200)

With Grad ND 6 (Exposure F/8, 1/100 sec., ISO400)

With Graduated Sunset Filter (Exposure F/6, 1/320 sec., ISO200)

GRADUATED NEUTRAL DENSITY 4 (2 STOPS)

LENS USED:

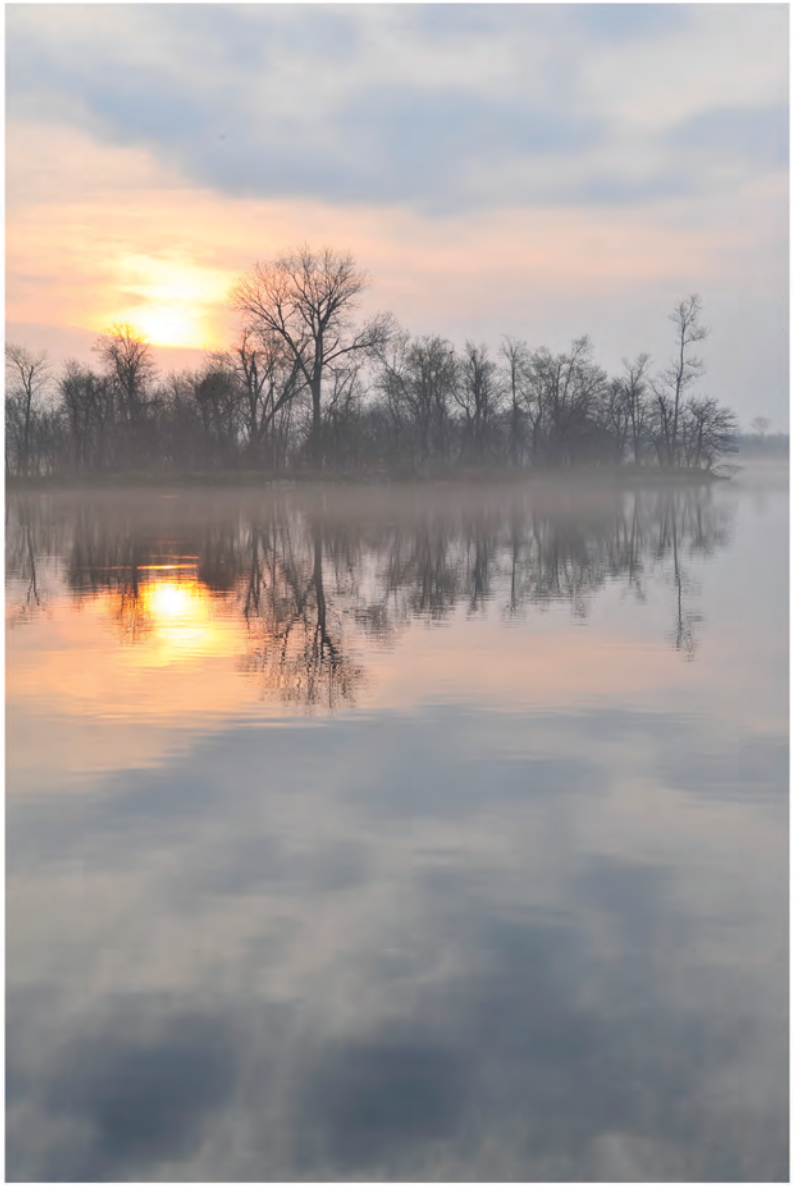
16-300mm Di II VC PZD Macro
Focal Length: 16mm

Without filter (Exposure F/22, 1/30 sec., ISO200)

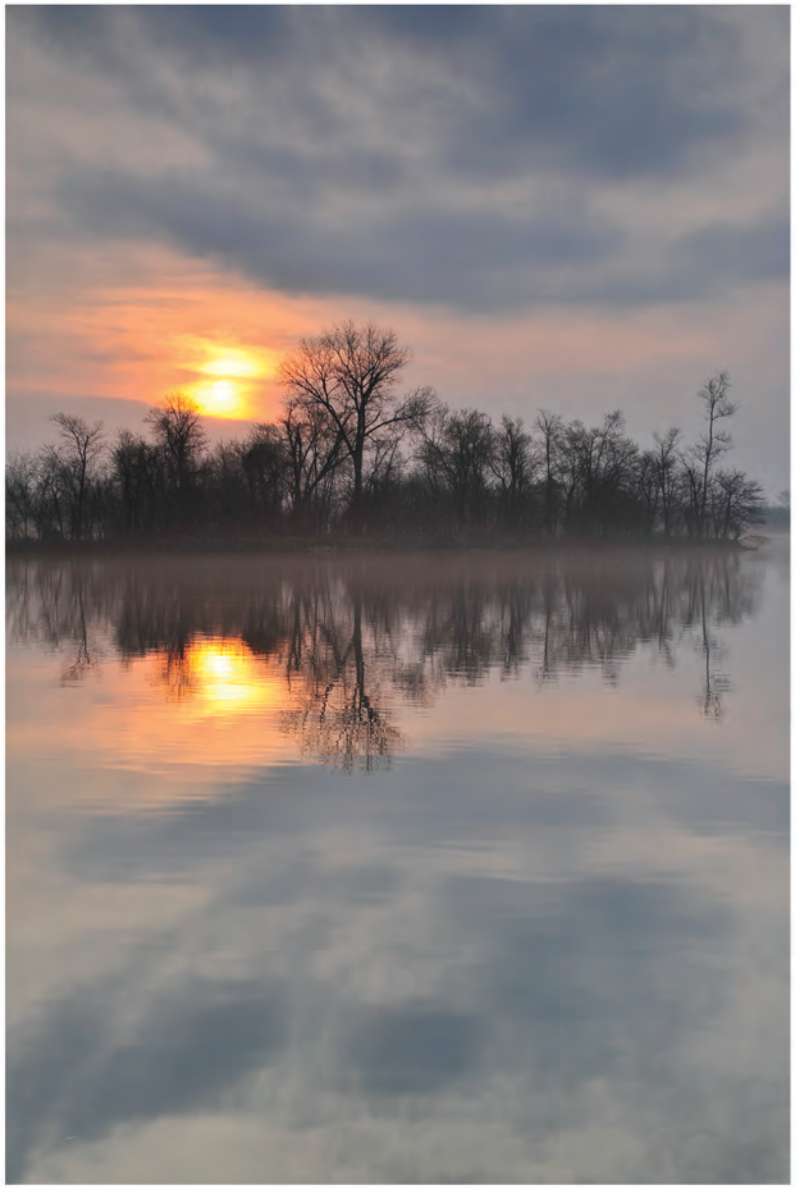
With Grad ND 4 (Exposure F/22, 1/30 sec., ISO200)

GRADUATED NEUTRAL DENSITY 4 (2 STOPS)

LENS USED:
28-300mm Di VC PZD
Focal Length: 65mm



Without filter (Exposure F/14, 1/60 sec., ISO400)



With Grad ND 4 (Exposure F/14, 1/60 sec., ISO400)

VARIABLE NEUTRAL DENSITY

LENS USED:
18-270mm Di II VC PZD
Focal Length: 22mm
Exposure: (all) F/22, ISO 100, Aperture Priority mode
Shutter speed set by camera as the Variable ND filter was adjusted from least to greatest density

Without filter (1/500 sec.)

Variable ND Filter (1/125 sec.)

Variable ND Filter (1/25 sec.)

Variable ND Filter (.4 sec.)

Variable ND Filter (.5 sec.)

Close-Up Filters – Capturing the Details

Getting in close can really make your images come alive through the texture and detail you are able to capture. The usual way to do that is with a macro lens. But having that extra lens with you is not always practical. The Tamron 16-300mm lens is my go-to lens in almost any situation on my crop sensor camera. It gives me amazing close up capability with 1:2.9 macro ratio but sometimes I want to get a little closer without putting a macro lens on the camera. So that's when I pull out a set of close-up filters. Close-up filters work like a magnifying glass or a pair of reading glasses put in front of your camera lens. While you can find close-up filters in square formats, the most common types are the round threaded screw-in filters. They are available in a variety of strengths, measured in diopters. The numbers indicate the strength of magnification and that increases the minimum focus distance of the lens. The lenses are usually sold in sets with the most common combinations being a +1, +2 and +4 filter in a convenient carrying case. The filters can be combined to provide even greater magnification. This is why the most popular close-up filter sets are the round threaded types to allow stacking of the filters. When using the close-up filters with a zoom lens, remember to zoom in all the way and you may need to experiment with diopter combinations to get the detail you want. You will still be able to use the autofocus capabilities of your camera and lens because there is no light loss with close-up filters. It is important to remember that the optical quality of these filters will not equal the crisp detail from the Tamron 60mm, 90mm and 180mm macro lenses. At some point, there will be more softening of the edges and more color fringing. But they are a great affordable option for capturing texture and detail.

Without Close-Up Filter (Exposure F/6.3, 1/125 sec., ISO400)

With +1, +2 and +4 Close-Up Filters Stacked (Exposure F/6.3, 1/125 sec., ISO400)

CLOSE-UP FILTERS (STACKED)

LENS USED:

16-300mm Di II VC PZD Macro
Focal Length: 300mm

There is incredible array of creative filters available on the market that will add interesting effects to your images. Colored filters can balance or correct natural and artificial light; enhance contrast and tone; or create artistic effects. There are full solid color filters, half color, graduated color and tri-color filters available which create an incredible palette of options in the field.

Bokeh is an effect almost every photographer loves, strives to achieve and is simply a fancy word for those creamy, soft out-of-focus highlights in a photograph. It is an effect that really can enhance your shallow depth of focus images, especially the ones with lights in the distant background. Filters can turn those points of light into interesting shapes. One of the most popular available for purchase is the star filter. They usually can be purchased with a variety of refractory points including 2, 4, 6 or 8-point stars.

Other special effects filters include fog, center spot, and day for night (DFN) as well as enhancing filters, which will intensify the saturation of red objects. Intensifying and Didymium filters create better color saturation and contrast in the red/brown/green spectrum without affecting the cooler range of colors.

Most of the time I shoot color in the field and convert to black and white in post-production. Every once in a while it's fun to go "old school" and shoot in monochrome in the field. When doing this I use my solid color filters, which in the "film" days were used for contrast adjustments. I have found the best results - with my camera - are a red filter, which darkens the sky and enhances clouds or a combination of the red with a polarizer, which intensifies the effect.

Admittedly owning a lot of creative filters can become a bit expensive, however there are things you probably have around the house that can be used as effects filters. From wine glasses to fabric to simple punched shapes in cardboard, you can create fun and unique images in camera.

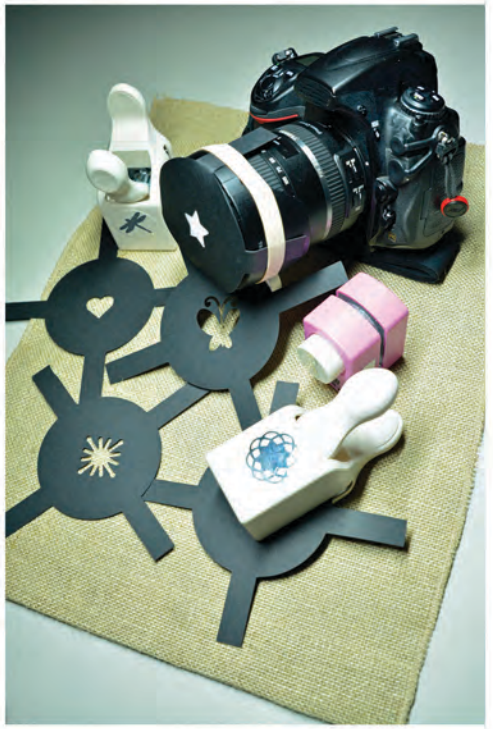
Commercially available filters for Bokeh are usually in pretty standard shapes like circles and stars but don't be limited to those shapes. With a pair of scissors, a set of paper punches in any shape you want, or one of the electronic cutting machines that are so popular with crafters, you can create bokeh filters in any shape you can imagine out of cardboard or plastic (see right).

A couple of key things to remember when creating these effects are to make sure the shape is centered on your lens, to have separation between your subject and the points of light and to make sure that no light seeps in between the filter and your lens, which would ruin the effect.

Here's a few other ideas for DIY filters when you need a creative boost: Create a soft focus filter to fit any lens you have by stretching a thin nylon sock or stocking over the lens - instant soft focus effect with minimal expense. Other ways to achieve a soft focus include smearing petroleum jelly or hairspray around the edges of an inexpensive clear filter. Don't use your good protective filter for this technique or you will have an expensive DIY filter because those things never completely come off the filter once applied. Other items that can be used as effects filters include tinted cellophane to alter the colors, pieces of lace for a different soft focus effect or try shooting through a wine or water glass for a unique distorted effect.

Creative effects filters are only limited by your imagination and willingness to experiment. Take the time to learn how any of these filters you want to use affect your final image in the camera. Almost any of these filters will yield great results with video too. Whether using your DSLR to shoot video or a video camera, try any of these creative filters on your next shoot.

The key to success with any of these creative effects is to just play. Remember, your actual image may vary.



B&W CONTRAST COMPENSATION FILTERS

LENS USED:
28-300mm Di VC PZD
Focal Length approx.: 50mm on all

Without filter (Exposure F/22 1/125 sec., ISO200)

With polarizer (Exposure F/22, 1/30 sec., ISO200)

With Red #25 (Exposure F/22, 1/30 sec., ISO200)

B&W Contrast Compensation filters shot with the camera in monochrome mode.

With Polarizer + Red #25Filter (Exposure F/22, 1/15 sec., ISO200)

DIFFRACTION AND STAR FILTERS

LENS USED:

28-300 Di VC PZD
Focal Length: Left 82mm / Right 46mm

With Diffraction Filter (Exposure F/10, 1/320 sec., ISO400)

With 4-Point Star Filter (Exposure F/9, 1/320 sec., ISO400)

With 6-Point Star Filter (Exposure F/9, 1/320 sec., ISO400)

FOG FILTERS

LENS USED:
28-300mm Di VC PZD
Focal Length: Right 30mm / Below 78mm

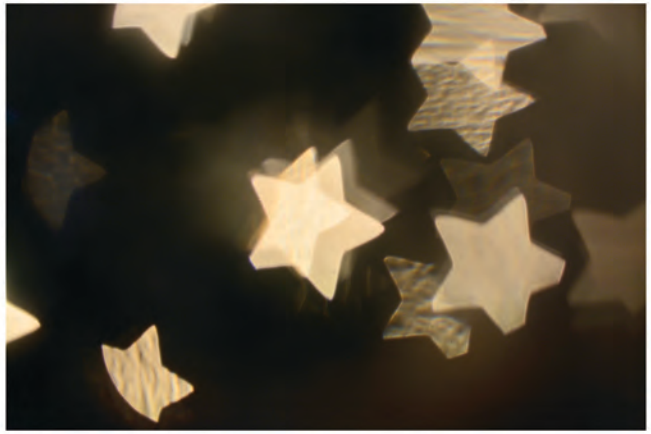
Without filter (Exposure F/10 1/30 sec., ISO400)

With Fog Filter (Exposure F/8, 1/30 sec., ISO400)

With Double Fog Filter (Exposure F/8, 1/30 sec., ISO400)

HOMEMADE BOKEH EFFECT

The "Bokeh" filters were created on a Silhouette Cameo craft cutting tool. The results vary wildly and lots of experimentation is best. The bokeh effect seems to work best with lots small of out of focus points of light, and can be used as stand alone shots, as the left and center examples below show. These stand alone can also be layered into other photos in post processing.

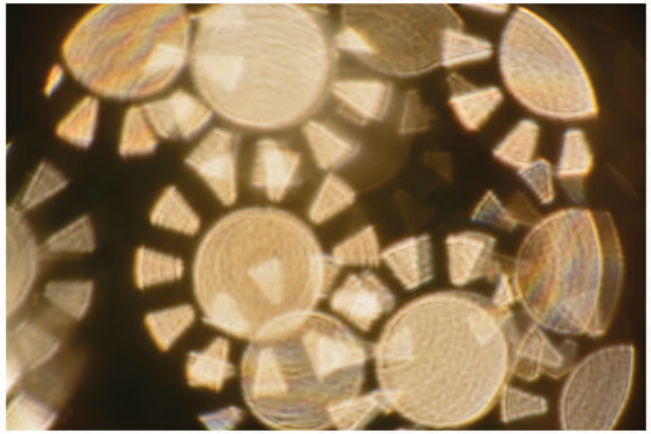


Star shaped homemade bokeh filter on lens.

Lens: SP 60mm F/2.0 Di II 1:1 Macro

Manual focus, set at minimum focus distance, shot approximately two feet from the lights. Light source: a string of holiday lights bunched inside a clear glass block.

(Exposure F/2, 1/250 sec., ISO400)



Sun shaped homemade bokeh filter on lens.

Lens: 16-300mm Di II VC PZD Macro Focal Length: 300mm

Manual focus, set at minimum focus distance, shot approximately three feet from the lights, hand held with VC on. Light source: a string of holiday lights bunched inside a clear glass block.

(Exposure F/6.3, 1/25 sec., ISO400)

Glass Bell with skating bear, with heart shaped homemade bokeh filter on the lens.

Lens: SP 90mm F/2.8 Di VC USD 1:1 Macro

Manual focus, the bear on the glass bell was placed approximately one foot from the lights, the camera was positioned approximately two feet from the glass bell. Lens focused on the bear on the glass bell. Hand held shot, with VC on.

(Exposure F/2.8, 1/160 sec., ISO400)

Filter Manufacturers (USA Distributor Infomation)

B+W/Schneider | www.schneideroptics.com

Cokin | www.omegabrandess.com

Fotodiox | www.fotodioxpro.com

Hoya | www.kenkotokinausa.com

Lee Filters | www.leefilters.com

Marumi | www.argraph.com

Promaster and Vectra | www.promaster.com

Singh Ray | www.singh-ray.com

Tiffen | www.tiffen.com

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