



# the Viewfinder

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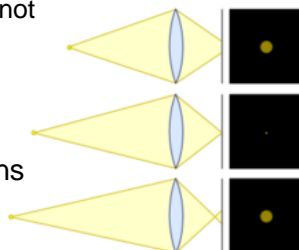
Contact Officers via the [www.syossetcc.org](http://www.syossetcc.org) link

## Getting Sharp Photos

Sharpness seems like a simple enough concept, but the factors that determine it are complex indeed. They include:

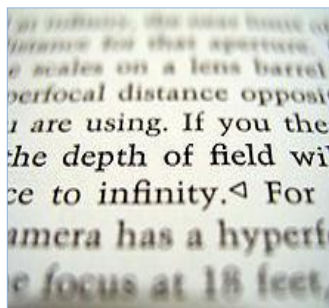
- Aperture
- Lens focal length
- Lens to subject distance
- Sensor/film resolution
- Lens quality

Note: we are talking about absolute, not apparent sharpness which may be covered in a future article.



Most commonly, sharpness refers to the degree to which a lens focuses a point source of light into a point on the sensor/film with the smallest possible "area of confusion". In the diagram shown here, the center image is at the sharpest focus setting. The other two figures show how focus on either side of that setting produces blur.

The lens of the human eye has an iris which is analogous to a lens diaphragm. The pupil of the eye is the aperture. The diaphragm can have as few as two and as many as as eight blades. Straight blades result in a polygon shaped



Example of shallow depth of field

aperture. Curved blades make the aperture more round and improve the bokeh. The number of blades can be inferred by counting the number of spikes converging from a light source or bright reflection in an image. An odd number of blades will produce twice as many spikes as there are blades. A Tamron 18-270 mm lens for example, will produce 14 spikes from a point source of light from its 7 diaphragm blades. Since the blades are rounded, the bokeh is considered pretty good. Eight blades would be even better, but that would impact the price. In case of an even number of blades, the two spikes per blade will overlap each other, so the number of

## Program 2012-2013 Meetings start at 7:30PM

### January

10<sup>th</sup> Competition – Judged by Joe Senzatimore

17<sup>th</sup> Bloomin' Ideas Slide Program and lecture by Denis Ippolito (sponsored by Hunt Photo)

24<sup>th</sup> Critique and Presentation TBD

### February

14<sup>th</sup> Competition – Judged by Dick Hunt

21<sup>st</sup> Cell Phone Photography- presented by Scott Katzenoff

28<sup>th</sup> Critique and presentation TBD

### March

14<sup>th</sup> Competition – Judged by Adofl Briceno

21<sup>st</sup> Lecture on TBD

28<sup>th</sup> Critique and presentation TBD

### April

4<sup>th</sup> Tentative SCC Board meeting

11<sup>th</sup> Theme Competition ("Doors and Windows") – Judged by Tom Crosley

18<sup>th</sup> Horses of the Carmague by Lorraine Piskin

25<sup>th</sup> Critique and presentation

### May

9<sup>th</sup> Competition - Judged by Mike DiRenzo

16<sup>th</sup> Lecture TBD

23<sup>rd</sup> End of Year Competition- Judged by Adolfo Briceno, Joanne Gazzola and Rick Witkover

### June

7<sup>th</sup> Awards Dinner at LaFamilia

spikes visible in an image, will be the number of blades in the diaphragm. Some point and shoot cameras do not have a diaphragm, they simulate aperture changes by using an automatic neutral density filter. Because the aperture does not change, there is no effect on depth of field as the simulated f-stop changes.

The larger the aperture, the shallower the depth of field and hence the smaller area of acceptable focus. One of the reasons why large aperture lenses are prized, in addition to their ability to capture images in low light and at high shutter speeds is their shallow depth of field at large apertures. This ability is frequently employed to isolate a subject by rendering background and/or foreground detail out of focus. Lenses that do that particularly well are referred to as having good bokeh, or a pleasing type of blur. This is usually the result of an aperture composed of 8 blades rather than fewer.

No lens is at its sharpest at its widest aperture. The “sweet spot” is usually a few stops up from wide open. Depth of field is greatest at the smallest aperture which causes many to believe that they will get greater sharpness the more they ‘stop down’. But here’s the rub—sharpness is compromised by diffraction at small apertures. Actually, the problem occurs at every aperture but is only apparent at very small apertures. You can think of diffraction like putting a nozzle on a garden hose. The more you restrict the flow, the more the water will spray. Given these factors, one must balance depth of field with maximum sharpness at a specific focal point.

Sharpness is affected by focal length to the extent that the subject may not be within the depth of field (DOF) of the lens. The longer the focal length, the shallower the DOF at a specific distance from the lens. Wide angle lenses have very deep DOF. The concept that brings this all together is Hyperfocal Distance.

The hyperfocal distance is the closest distance at which a lens can be focused while keeping objects at infinity acceptably sharp. For the geeks out there:

$$H = \frac{f^2}{Nc} + f$$

Where:  $H$  is the hyperfocal distance,  $f$  is focal length,  $N$  is the  $f$ -number,  $C$  is the circle of confusion and  $D$  is the aperture diameter.

*As an example, a 50 mm lens at  $f8$  using a value of 0.03 mm for the circle of confusion, the hyperfocal distance is*

$$H = \frac{(50)^2}{(8)(0.03)} + (50) = 10467 \text{ mm}$$

*If the lens is focused at a distance of 10.5 m, then everything from half that distance (5.2 m) to infinity will be acceptably sharp.*

SCC January Scores						
		1	2	3	Jan Top 2 Avg	Season entries
BWA	Scheinerman	8.5	8.5	10.0	9.25	13
BWA	Goldstein, B				-	3
BWA	Chhatpar	8.5	8.5		8.50	13
BWA	Patwa, R	8.0	7.5	8.0	8.00	15
BWA	Meles	8.0	8.0	8.0	8.00	12
BWA	Newman				-	12
BWA	Weisler	8.0	8.5	7.5	8.25	15
BWA	Metzger				-	2
BWA	Herbst				-	3
BWA	Ross, A				-	2
BWB	Ross, J	9.5	7.5	7.5	8.50	5
BWB	Bass				-	3
BWB	Kirshenbaum	7.0	8.0		7.50	11
BWB	Langholz				-	2
BWS	Silverstein				-	12
BWS	DeBiase	8.5	8.5	10.0	9.25	15
BWS	Agdem	8.0	8.0	9.0	8.50	15
COA	Goldstein, B				-	3
COA	Scheinerman	7.5	9.0	10.0	9.50	15
COA	DeBiase	9.0	8.0	8.5	8.75	15
COA	Ferrara, C	8.5	8.0		8.25	10
COA	Meles	7.0	8.5	9.0	8.75	12
COA	Newman				-	12
COA	Ross, A	8.5	8.0		8.25	5
COA	Chhatpar	8.5	8.0		8.25	14
COA	Metzger				-	4
COB	Biscardi, S	10.0			10.00	1
COB	Ross, J	8.0	7.5	9.0	8.50	5
COB	Kirshenbaum				-	9
COB	Bass	8.5	7.5	8.0	8.25	9
COB	Weisler	7.5	8.0	8.0	8.00	15
COB	Herbst				-	7
COB	Langholz				-	3
COS	Silverstein				-	12
COS	Agdem	8.5	10.0	8.5	9.25	15
COS	Patwa, R	8.5	8.0	8.5	8.50	15
CR	Katzenoff, S	10.0	8.5		9.25	2
CR	Silverstein				-	12
CR	Newman	8.0	8.5	7.5	8.25	15
CR	Scheinerman				-	9
CR	Sterman				-	8
CR	Goldstein, B	8.5			8.50	1
CR	Chhatpar	8.00	8.0	8.5	8.25	15
CR	Bass				-	2
CR	DeBiase				-	1
DPA	Agdem	9.0	9.0	9.0	9.00	15
DPA	Scheinerman	10.0	8.5	8.0	9.25	15
DPA	Bowie	8.5	8.0	9.0	8.75	15
DPA	Harrison, G				-	9
DPA	Meles	7.5	8.5	8.5	8.50	6
DPA	Goldstein, B	8.5	8.0	8.5	8.50	15
DPA	Patwa, R	8.5	7.5	8.0	8.25	15
DPA	Chhatpar	8.0	8.5	8.5	8.50	15
DPA	Newman	7.5	8.0	9.0	8.50	15
DPA	Sterman	8.0	7.5	8.0	8.00	15
DPA	Goldstein, C	8.5	8.0	7.5	8.25	12
DPA	Weisler	7.5	8.0	8.0	8.00	15
DPA	Wouffin	8.0	8.0	7.5	8.00	15
DPA	Harrison, A				-	5
DPA	Volin				-	12
DPB	Rose	7.5	10.0		8.75	14
DPB	Katzenoff, S	7.5	8.0	8.5	8.25	3
DPB	Kirshenbaum				-	11
DPB	DeBiase	8.0	7.0	8.5	8.25	8
DPB	Herbeert				-	3
DPB	Bass				-	8
DPB	Rosensweet				-	1
DPB	Langholz	7.0	8.0		7.50	12
DPS	Silverstein				-	12
DPS	Ferrara	8.0	8.0	10.0	9.00	13

**Focus Stacking** - DOF issues are greatest at close distances with relatively long focal length lenses for the reasons stated above. This is the perfect storm for macro photography which is usually done with lenses of 60 mm to 100 mm at very close distances. The techniques employed to keep a subject in sharp focus are to keep the subject parallel to the lens (sacrifice perspective), keep the distance further away than ideal (crop later), and use a very small aperture such as f22 for maximum DOF (increased diffraction). While it is true that macro lenses are designed for working at close distances and aberrations are corrected for those parameters to the extent possible, the underlying physics does not change.

An answer to the problem of short DOF in macro photography is a technology that was initially developed for photomicroscopy, where DOF is a fraction of a millimeter. The technique is analogous to HDR photography where exposures are blended but in the case of focus stacking, multiple images taken at varying focus points are blended to create an image with infinite DOF. The results can be stunning.

Focus stacking can be done in Photoshop by merging layers, or in specialized software. One such program is Helicon Focus which has been written about previously in the *Viewfinder*.

Regardless of what program you use, you will need a series of photos taken at progressive focal points- the more the better. The series must be taken with the camera locked on a tripod in manual mode. You don't want the exposure to change between captures. The focus is set to manual. The aperture should be the optimal aperture for your lens which should be your sharpest one. Generally that means a prime lens but a good quality zoom is fine as long as the zoom setting can be locked in place. There is no need to worry about DOF. Here is how to focus stack with Photoshop. The series of images taken at progressive focus settings is selected in Bridge, then follow these steps:

#### *Tools/Photoshop/Photomerge*

- Select Auto for 'Layout'
- Uncheck "Blend Images Together"
- Click "OK"

In the Layers pallet, select all the layers

#### *Edit/Auto-Blend Layers-*

- select "Stack Images"
- select "OK"

#### *Layer/Flatten Image*

HeliconSoft, the makers of Helicon Focus has a companion program called Helicon Remote. The program automates the process of focusing the camera as well as controlling the exposure and other parameters.



To use Helicon Remote, the camera is tethered to a computer via a USB cable. Once tethered, your computer becomes a live view screen. The software is used to specify the furthest and closest desired points of focus and the number of frames to shoot. Once that is set, the software takes control of the camera and will take the series of photos automatically setting the focus for each capture (the focus mode setting on the camera is auto). Pretty cool!

**What is Creative?** Because the question persists, I will attempt to clarify the definition of 'creative photography'. Most of this content is taken from the PFLI website.

The purpose of creative photography is to stimulate creative thoughts and encourage experimentation with new ideas going beyond a simple photograph. The final result must be based on and have some resemblance to the maker's original photographic work, modified exclusively by the photographer. Images must originate as photographs taken by the maker. After manipulation enough of the original image must remain to be discerned. Any image can be considered creative and does not have to mean Photoshopped. Perhaps the subject or perspective is creative, or it may be an artistic interpretation of a scene. The image may be made completely within the camera if the subject or perspective are unusual, dramatic or intriguing or the image may be modified to reflect an artistic interpretation of the original scene, creating an altered reality. Such images may display obvious change in natural color, form, shape, or any combination of these. Original images must be altered by the maker. Artwork or computer graphics may be incorporated, if the original photographic content predominates. Images may not be constructed entirely within a computer (i.e. it starts in a camera). The image's core content be identifiable.

## PFLI Scores for December 2012

BW A	25	Valerie DeBiase	'The Tomb Room'
Color A	25	Chris Ferrara	'A View From The Bench'
Color A	25	Marty Silverstein	'Dawn Light'
Digital A	25	Bill Bowie	'Surfer 7'
Digital B	25	Doreen Rose	'Gerbera'
Digital B	25	Vivian Bass	'Pink And Yellow Dahlia'
BW A	24	Ira Scheinerman	'Artiste'
BW A	24	Jules Weisler	'Lighthouse'
Color A	24	Ira Scheinerman	'The Carnival'
Color B	24	Frank Kirshenbaum	'Lily 1016'
Digital A	24	Chris Ferrara	'Blue Jay in Flight'
Digital A	24	Marty Silverstein	'stretch at belmont'
BW A	23	Alan Agdern	'Looking At You Eye To Eye'
BW A	23	Sunil Chhatpar	'Iguana'
Color A	23	Valerie DeBiase	'Bridges Near And Far'
Color B	23	Alice Langholz	'Serenity'
Color B	23	Jack Ross	'Hummer'
Creative	23	Ira Scheinerman	'Evening Catch'
Digital A	23	Barry Goldstein	'Beach Tree'
Digital A	23	Fred Stermann	'Three Is A Crowd'
Digital A	23	Peter Newman	'Cleared for landing'
Digital B	23	Frank Kirshenbaum	'Daisy 125 (1)'
Digital B	23	Valerie DeBiase	'Zion Sunset Walk 2'
BW B	22	Frank Kirshenbaum	'Lily 101'
BW B	22	Jack Ross	'Water Flowers'
Color A	22	Alan Agdern	'Flower 516'
Color A	22	Barry Goldstein	'Door Handles'
Color A	22	Peter Newman	'The Wrestlers'
Color A	22	Ramesh Patwa	'St Basil Cathedral Russia'
Color B	22	Alan Herbst	'Landing On A Dime'
Color B	22	Jules Weisler	'Caribbean Sunset'
Color B	22	Vivian Bass	'Flower'
Digital A	22	Alan Agdern	'NYC At Night'
Digital A	22	Sunil Chhatpar	'DAHLIA 7'
Digital B	22	Alice Langholz	'harbor sunset'
BW A	21	Alan Herbst	'At Anchor'
BW A	21	Barry Goldstein	'Bench'
BW A	21	Peter Metzger	'Blue Cypress Lake'
BW B	21	Vivian Bass	'Engine'
Color A	21	Peter Metzger	'Times Gone By'
Color A	21	Sunil Chhatpar	'Dahlia 11'
Creative	21	Fred Stermann	'Cacti'
Creative	21	Fred Stermann	'Bottles'
Creative	21	Peter Newman	'lighthouse impression'
Creative	21	Vivian Bass	'Jumped Over The Kite'
Digital A	21	Gerald Harrison	'Night Heron 7704'
Digital A	21	Jules Weisler	'lily'
Digital B	21	Elliot Rose	'ER571'
Digital B	21	MaryAnn Herbert	'Tunnel'
BW A	20	Ramesh Patwa	'Mt Etna, Sicily'
Creative	20	Peter Newman	'Dinner is almost ready'
BW A	19	Alan Ross	'Into The Storm'

**VIEWFINDER SEARCH FOR EDITOR UPDATE-** IT IS NOT TOO LATE TO GET ON THE WAITING LIST FOR THIS JOB. ALL KIDDING ASIDE. WRITING THIS NEWSLETTER CAN BE BOTH REWARDING AND EDUCATIONAL. IT IS ONLY BECAUSE I HAVE BEEN DOING THIS SO LONG THAT I AM SEEKING A SUCCESSOR. ON THE JOB TRAINING WILL BE GIVEN. Contact [bg1958@live.com](mailto:bg1958@live.com)

## PFLI Scores for January

Judges: R. Agredo- J. Senzatimore- T. Crosley

BWA	Barry Goldstein	Fence And Tree	20
BWA	Ramesh Patwa	Desert Scene Namibia	21
BWA	Valerie Debiase	Going Down	22
BWA	Ira Scheinerman	The Elder	22
BWA	Alan Agdern	Puma 44	24
BWA	Alan Herbst	Rolls Silver Ghost	21
BWA	Mordecai Meles	Mail Slot	22
BWA	Sunil Chhatpar	Clark Garden	23
BWA	Peter Newman	Hawk 188	23
BWA	Jules Weisler	Church And Castle	23
BWB	Vivian Bass	Mill Pond	21
BWB	Frank Kirshenbaum	Flower 171	22
CPA	Ira Scheinerman	The Storekeeper	23
CPA	Alan Agdern	Cardinal 29	23
CPA	Valerie Debiase	Ready To Launch	23
CPA	Chris Ferrara	Sand Harbor Lake View	24
CPA	Marty Silverstein	Eagle Eyes	25
CPA	Barry Goldstein	Camelia	21
CPA	Ramesh Patwa	Orchids	22
CPA	Sunil Chhatpar	Dahlia	22
CPA	Peter Newman	Autumn Falls	22
CPA	Alan Ross	Don't Even Think About It	23
CPB	Vivian Bass	Pretty Girl	21
CPB	Frank Kirshenbaum	Red Daisy 976	21
CPB	Jules Weisler	Egret Scratching	22
CPB	Alan Herbst	Air Smoke Tricks	22
CPB	Alice Langholz	Fall Beauty	22
CPB	Jack Ross	stained Glass	22
CRE	Peter Newman	boardwalk art fair	19
CRE	Fred Stermann	Sleeping Root	21
CRE	Ira Scheinerman	Glub	21
CRE	Fred Stermann	Brick Portal	22
CRE	Ira Scheinerman	The Grafiti Pit	22
CRE	Peter Newman	painted parrot	19
DPA	Alan Agdern	Watching the Night	21
DPA	Marty Silverstein	docker	22
DPA	Sunil Chhatpar	SUNFLOWER 22	23
DPA	Peter Newman	Its Mine	24
DPA	Bill Bowie	Americana	24
DPA	Ramesh Patwa	Pink and White	21
DPA	Ira Scheinerman	The Bride	22
DPA	Jules Weisler	yellow flower	22
DPA	Barry Goldstein	Nobody Home	22
DPA	Gerald Harrison	Parrot 4637	24
DPB	MaryAnn Herbert	Bethpage Ceremony	19
DPB	Vivian Bass	Quickly Lowering	21
DPB	Valerie DeBiase	Cacao Liquer	21
DPB	Doreen Rose	Sunset Osprey	22
DPB	Frank Kirshenbaum	Flower 580	25
DPB	Alice Langholz	The Outhouse	21