

FLASH PHOTOGRAPHY PRIMER

GA CAMERA CLUB

PRESENTER: TONY MORENO

FLASH PHOTOGRAPHY PRIMER

Flash photography supplements existing light with one or more new sources under the photographer's control, or replaces existing natural light altogether.

Flash lighting uses four principle elements:

- Flash strobe light source(s)
- Mounts, stands
- Go-Between Physical Light Modifiers (GOBO's)
- Reflectors

FLASH PHOTOGRAPHY PRIMER

Why supplement existing light with a flash?

- Most indoor situations have very low light levels, resulting in higher ISO settings, smaller depth of field, or slow shutter speeds, all of which may be undesirable.
- Existing light can cast harsh shadows, which can be softened with a properly positioned GOBO or secondary source of light.
- You can control exposure levels between foreground and background objects.
- It provides artistic options not otherwise available.

FLASH TYPES

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Flashes have historically been two types:

- Small AA battery powered portable types that use the hot shoe to interface to camera systems.
 - Power level is described by “Guide Number” nomenclature
 - Bigger units have GN of 200feet at ISO 100.
 - $200\text{feet} / f2.8 = 70$ feet of flash range
 - Alternatively, $20\text{ feet} \times f4 = 80$ GN minimum required
- Large AC powered studio strobes that use 1/4” jacks and/or PC connectors to interface to camera systems.
 - These provide the greatest amount of light power.
 - Power is expressed in Watt/seconds and/or Lumenseconds



Lithium batteries, wireless trigger communications, and better electronics are shrinking the big strobes down.

SPEEDLIGHTS

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\$100 to \$500

Speedlight flashes are engineered to provide the greatest strobe power, with the fastest recharge rates, in the smallest, most lightweight package possible.

Other features often seen:

- Fancy exposure control in concert with camera electronics (TTL, E-TTL, iTTL/CLS).
- Infrared light emission to aid in-camera autofocus electronics.
- Motorized flash heads to focus light better.
- Built in bounce card for eye catch lights.



Methods of Triggering Your Flash

Flashes can be triggered in different ways:

- Direct electrical connections to the camera
 - Hot Shoe
 - PC Plug
- Wireless Optical Trigger
 - A flash of light is detected by a photoreceptor
- Wireless Infrared Trigger (IR)
 - Data and trigger information is transmitted via IR (like a TV remote)
- Wireless Radio Frequency (RF)
 - Data and trigger information is transmitted via RF (like cell phone)

HOT SHOE INTERFACE

Usually has multiple electrical contacts but only a single signal line and ground are needed to trigger the strobe.

Other signal lines provide digital communication between the camera system and the flash.

- TTL
- E TTL
- Full Camera Control



PC INTERFACE

Proprietary connector that established a foothold in the photography industry for transmitting the strobe's trigger command.

More expensive and less reliable than other connector types, it is not well loved by working flash photographers.

Example:

<http://strobist.blogspot.com/2010/02/its-time-for-pc-jack-to-die.html>



THE UNIVERSAL TRANSLATER

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\$15

A few manufacture's have produced an adaptor that converts the hot shoe connector to both a PC connector and a 1/8" mono tip sleeve (TS) jack connector.

It can be used to easily connect multiple flashes together.

(Flashes need to be set to Manual Mode)



LIGHT MODIFIERS

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Many options exist to re-direct, modify, focus, bounce, and soften light sources.

They are often called “GOBO’s” for “Go Between”

- Reflectors
- Scrims
- Umbrellas
- Soft Boxes
- Light Boxes
- Grids
- Snoots

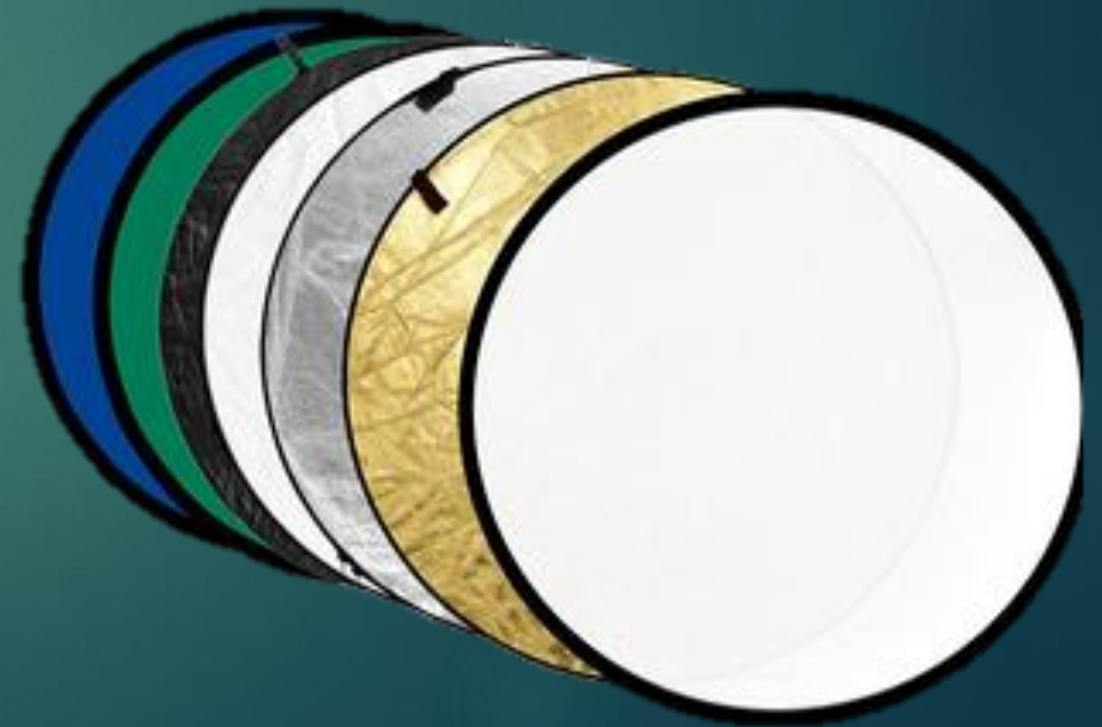
REFLECTORS

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\$20-\$50

Made of a reflective material and mounted on a stand, or held by hand, these bounce light back.

Properly positioned, they can turn a 1 flash setup into a 2 flash setup.



SCRIM

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\$50 and up

Made of a semi-transparent material, light is passed through the screen to turn a point light source such as the sun or flash strobe into a much larger lower brightness source.



SCRIM (CONTINUED)

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Photos By: Brett Florens

UMBRELLAS

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Umbrella: \$15-\$30
Stand: \$30-\$80

Like a reflector in your flashlight, an umbrella focuses light to put the flash energy where you want it.

The larger the umbrella, the softer the light source.

Can sometimes be used as a shoot through screen.

You adjust the distance between the flash and umbrella to adjust the size of the light source and keep flash energy from spilling over the edge.



FLASH HOLDERS FOR STANDS

15

\$10-\$35

Stands do not have hot shoe interfaces.

Adaptors must be separately purchased to transition from the stand mount to the hot shoe mount.

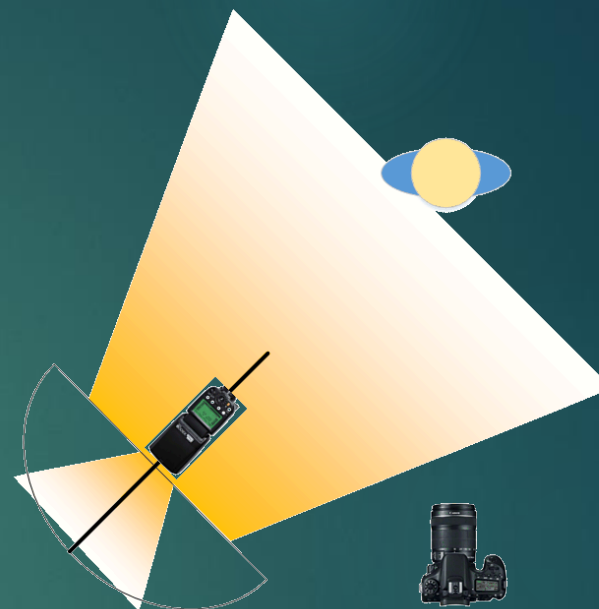
A hole and screw are included for the umbrella shaft to pass through.

Umbrella mount



LARGE LIGHT SOURCE

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SOFT BOXES

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\$50 and up

A hybrid of an umbrella and a shoot through screen in a non-hexagon form factor, light boxes are useful to keep light energy focused on objects narrow and tall.



LIGHT BOXES

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\$25-\$100
DIY

A box with shoot through screen material on multiple sides, products or objects are placed inside the box and light sources are positioned outside of the box.



GRIDS

19

\$20-\$60
or DIY

Sometimes you want to control the light from your flash from illuminating surrounding areas, or control the light's edge. Instead, grids help turn the light into a focused column with a very distinct edge.



Photo By: Lindsay Adler

SNOOTS

20

\$20-\$50

The next step from a grid, snoots provide even more distinct light edges.



GLOBES

21

~\$50

The exact opposite of a grid or snoot, globe adaptors try to throw the light in all directions. Useful indoors, these flash modifiers turn nearby walls and ceilings into large reflector surfaces, generating soft light at the expense of more flash energy needed.

Not recommended outdoors.



COMPARISON

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Oval Edge

Soft Edge

Hard Edge

Harder Edge



Direct Flash

Lightsphere® Universal™

PowerSnoot™, no grid

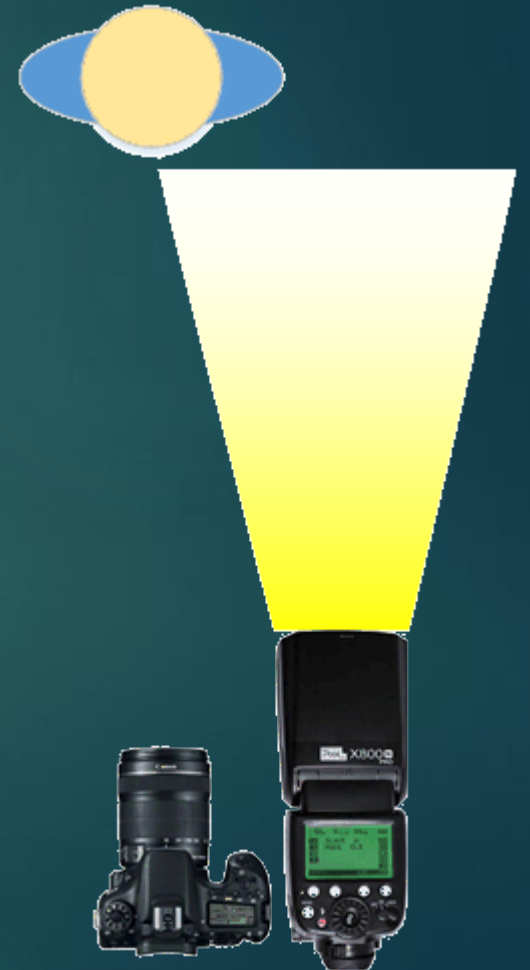
PowerSnoot™ with grid

BASIC FLASH SETUPS – ONE

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Single flash mounted on top of camera

- Minimal shadows, lowest contrast
- Can have a flat look
- Good outdoors where flash can fill shadows created by the sun
- Easiest setup



BASIC FLASH SETUPS - ONE

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BASIC FLASH SETUPS - ONE, OFFSET

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Single flash remoted off camera

- More shadows and drama
- Shadows will be hard edged without a large diffuser



BASIC FLASH SETUPS - ONE, OFFSET

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BASIC FLASH SETUPS - TWO

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One flash remoted off camera

One flash on camera

- Control over shadows and their angle and size
- Shadows will be hard edged without a large diffuser, but on camera flash can now lighten that edge with fill.



BASIC FLASH SETUPS - TWO

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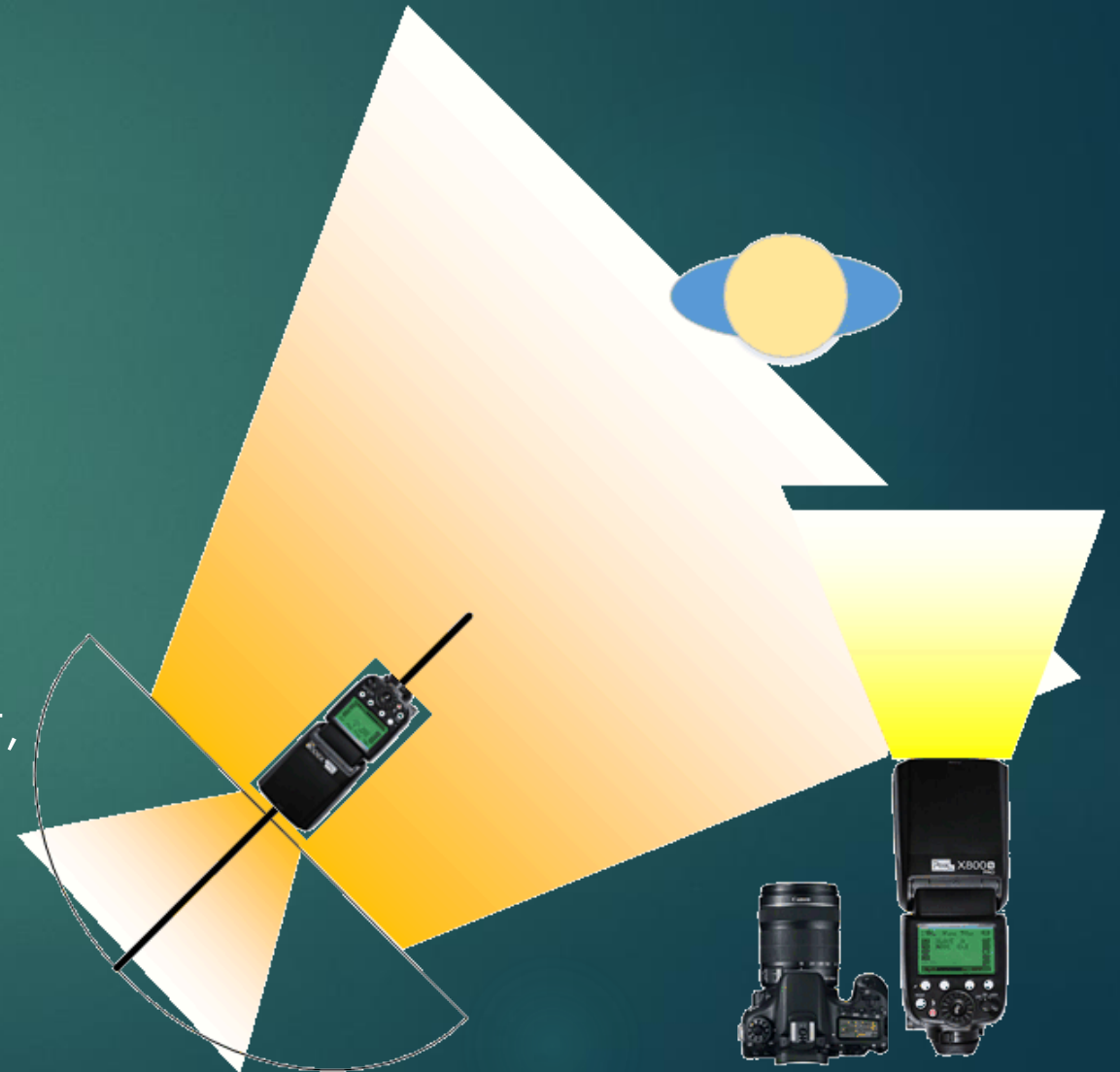
BASIC FLASH SETUPS - TWO

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One flash remoted off camera
with bounce umbrella

One flash on camera

- Control over shadows and their angle and size
- One flash made into a large source for softer shadows
- Light is focused towards subject, maximizing available power

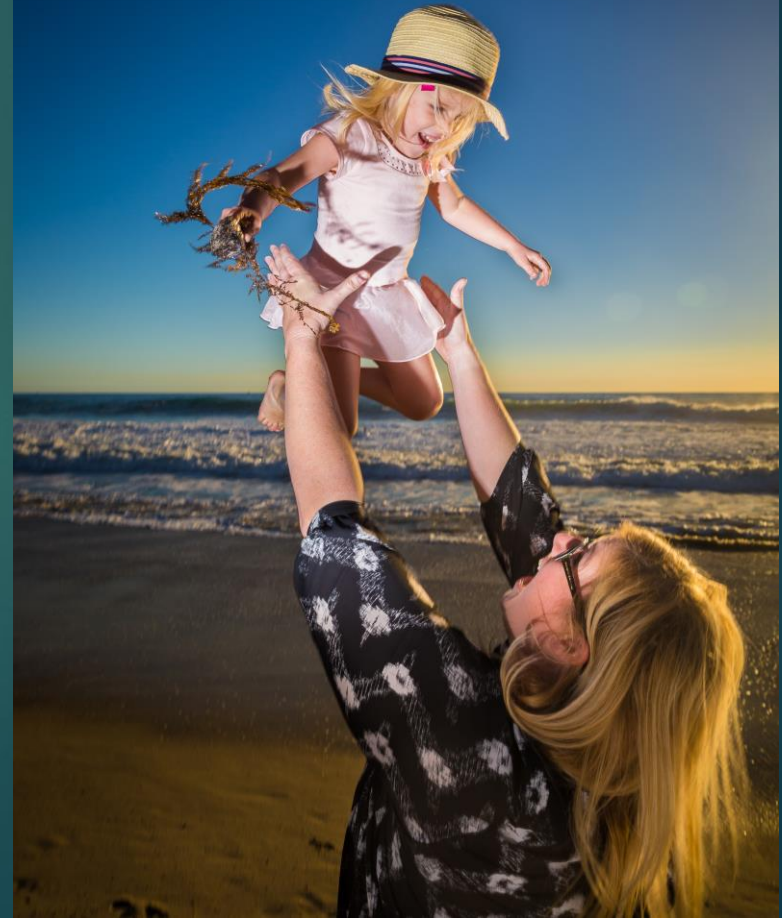


SHOOTING WITH UMBRELLA

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Positioned far enough away, the umbrella source looks just like a regular flash (point light).



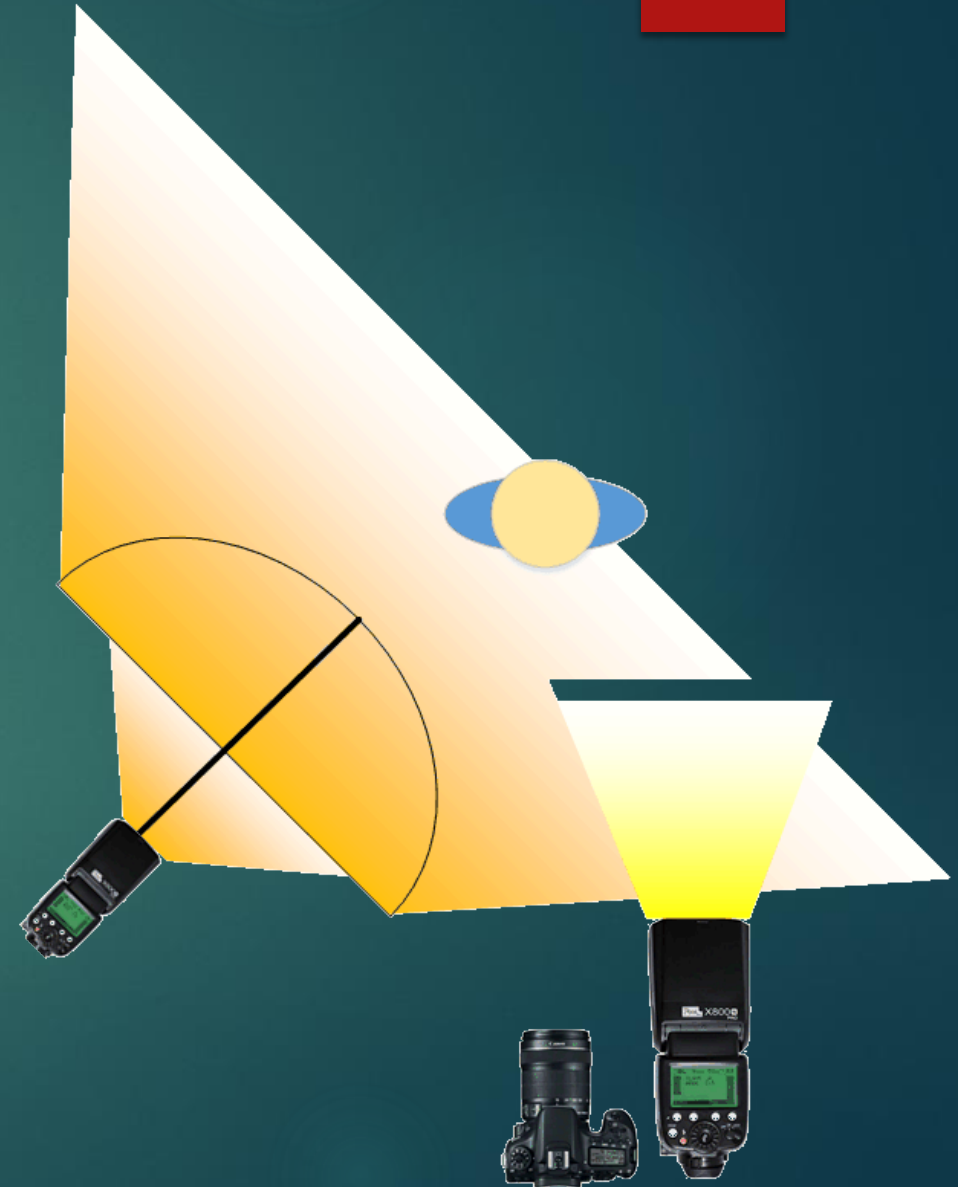
BASIC FLASH SETUPS - TWO

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One flash remoted off camera shooting through an umbrella

One flash on camera

- Control over shadows and their angle and size
- Shadows will have very soft edges
- Less available flash power
- A lot of spill light



SHOOTING THROUGH A SCRIM

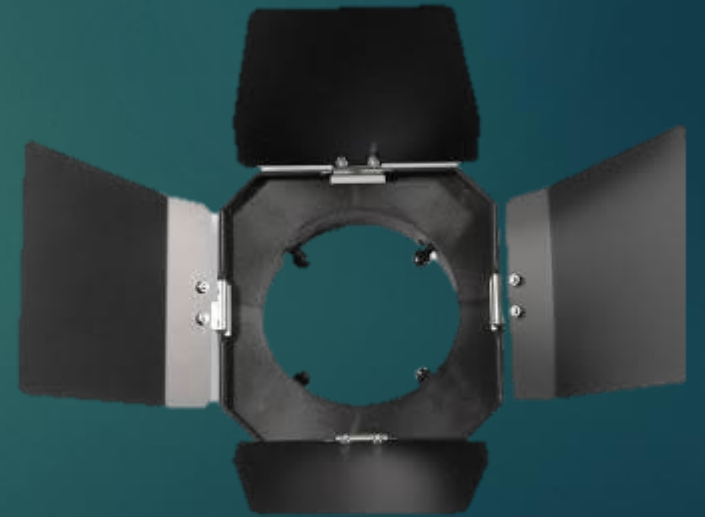
32



MANAGING SPILL LIGHT

Large light sources have two significant problems:

- Decreased power because flash energy is spread out into a large area
- The additional spill light may illuminate areas that you want under-exposed.
 - Use “barn doors” or poster boards to block unwanted spill light.

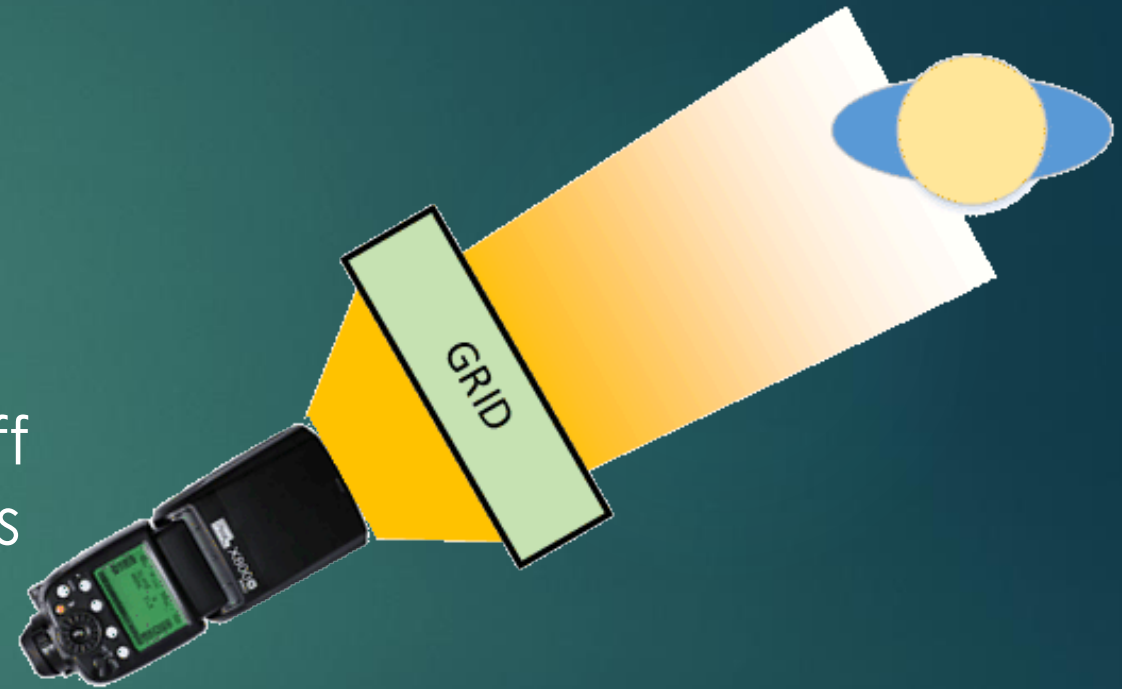


BASIC FLASH SETUPS – ONE w/GRID

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One flash remoted off camera shooting through a grid

- High contrast shadows add significant drama.
- Spill light is controlled and kept off of background which in turn stays darker
 - Background fill can now be controlled with a second flash



BASIC FLASH SETUPS – ONE w/GRID

**EXAMPLE WITH
NO GRID!**

SPILL LIGHT



BASIC FLASH SETUPS – ONE w/GRID

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Adjusting Flash Power

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There are three ways that flash power can be controlled:

- Power controls of the flash unit
 - Usually has adjustments ranging from $1/128$ to $1/1$
- Distance the flash is from the subject
 - Think of the light energy as spread over a surface, the farther away, the larger the surface.
 - Energy decreases at d^2 , where d is the distance.
- Redirecting spill light back onto the subject

ELEVATION

Most professional lighting setups I've observed do not place light sources only to the left or right.

Experiment with your flash positioned above your subject, angled approximately 45° down.

Light sources above the subject are able to add a highlight to hair, and/or a nice rim light that contrasts against a black background.

FIGHTING THE SUN

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When outdoors, it takes a lot of flash power to compete with the sun. If you cannot place your flash close to your subject, a speedlight may not be able to be a significant light source for your exposure.

Solutions:

- Look for shade to place your subject in (trees, building shadow)
- Make shade by placing a scrim between the sun and the subject
- Move the flash closer to the subject to increase power
- See if you can position the sun behind your subject such that the sun only provides a hair highlight and their face is in shadow

COLOR TEMPERATURE

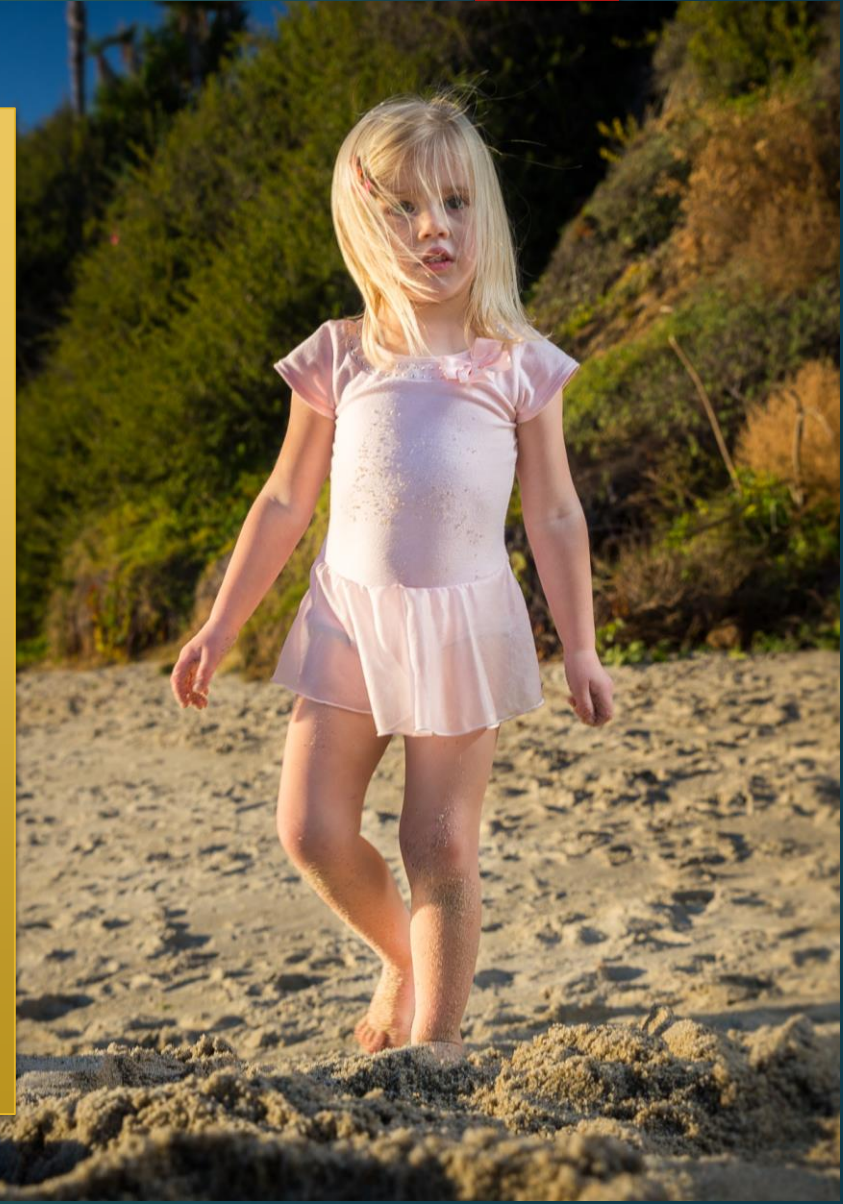
40

Flash color temperature is fairly cool, similar to the temperature of the sun at noon, but not later in the day.

Images taken outdoors near the sunset “golden hour” will have two distinct color casts. Very difficult to correct in post.

Solution:

Apply a warming gel over the flash to give it a color temperature closer to the sun at that time of day.



PLAY WITH COLOR

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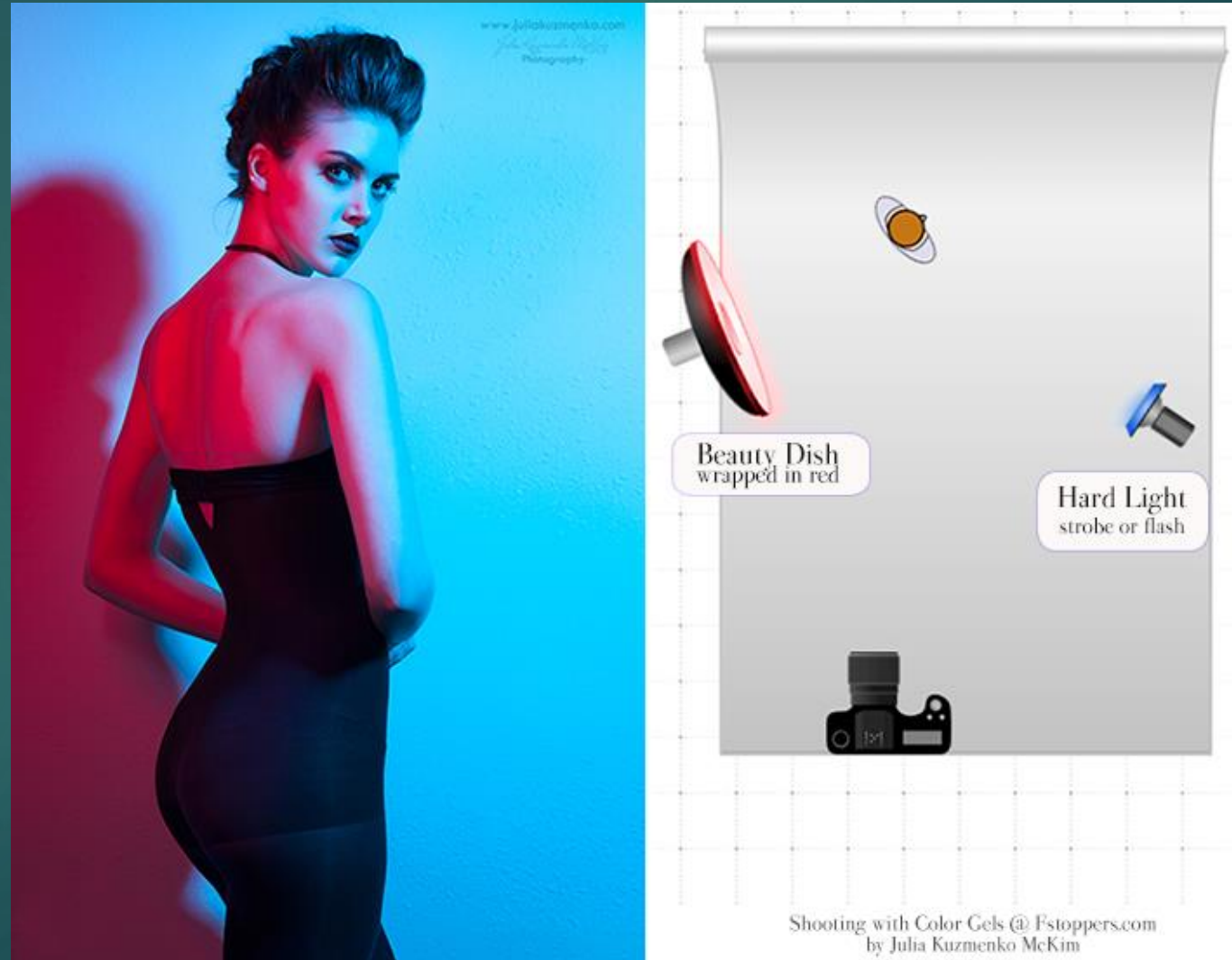


Photo By:
Julia Kuzmenko McKim

LIGHTING BACKGROUNDS

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Don't forget that flashes can be used to illuminate other elements in a scene, such as the background.

Photos By:
Laya Gerlock



SPEEDLIGHT AA BATTERY TYPES

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Use NiMH rechargeable battery types instead of single use alkaline batteries.

NiMH has lower internal resistance and can re-charge the flash's capacitive energy storage components more quickly, shortening the time it takes for the flash to be ready for your next shot.

If possible, set your flash to “BEEP” when its recharge cycle is complete, giving you an audible notification that it is ready.

NO FLASH? NATURAL LIGHT!

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When indoors, be on the lookout for windows with a lot of light coming through and position your subject by the window.

A large white reflector or poster board can be used to bounce window light onto the other side of the subject's face.

Conversely, a large black reflector can help darken other side.

- Rembrandt Lighting



Photo By:
Andreas Jorns

WEB RESOURCES:

<http://strobist.blogspot.com/2006/03/lighting-101.html>

<http://speedlights.net/>

<http://strobist.blogspot.com/2009/05/universal-translator-ushers-in-new-age.html>

<http://www.diyphotography.net/analyzing-light-breakdown-lighting-photo/>

<https://www.srlounge.com/workshop/the-flash-modifier-you-already-own/>