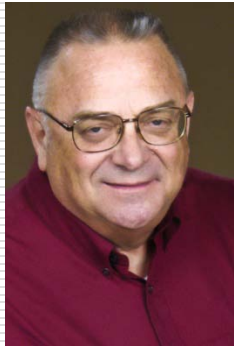


# Studio Lighting

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Kent Messamore

9/5/2011



# Studio Lighting

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- ❑ Get exposure and color balance right in camera. Don't depend on Photoshop
- ❑ Raw or JPEG – 4096 tones or 256?
  - If JPEG set color balance in Camera (AWB, daylight, or 5600 degrees K)
  - If RAW use a reference card in initial studio shot and eye dropper in Photoshop or Lightroom
- ❑ We are going to introduce you to Studio Lighting Equipment
- ❑ Show you some types of lighting and the differences they make in the portrait
- ❑ Then we are going to ask you to set up the lights in various exercises

# Four factors of light to consider

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## □ Direction

- Where are the sources of light coming from

## □ Distance

- How far away from the light is the subject.
  - If light is close it wraps (flows) around the subject like water
  - If light is far away it acts as a point source and doesn't flow

## □ Color

- Is the light warm or cool – Gold reflector to warm. Silver to cool.

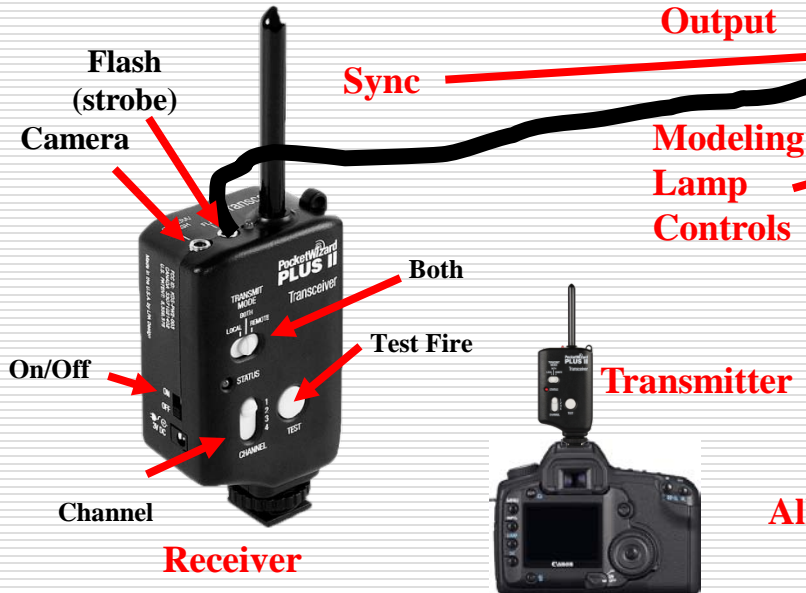
## □ Quality

- Is the light hard or soft – Use umbrella or softbox to soften

# Studio Lighting Equipment



Alien Bee  
B400 - \$225  
B800 - \$280  
B1600 - \$360



All other lights can be triggered off the flash of the first light.  
(Slave flash can be turned off by plugging in a sync cord)

# Additional Equipment

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**Tripod**



**Backdrop  
& Stand**



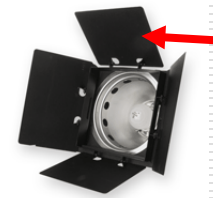
**Lighting Kits**



**Boom**



**Grids**



**Flags**



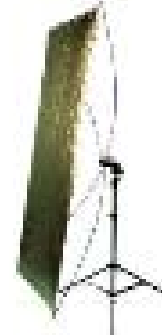
**Umbrella**



**Soft box**



**Broly**



**Reflector**



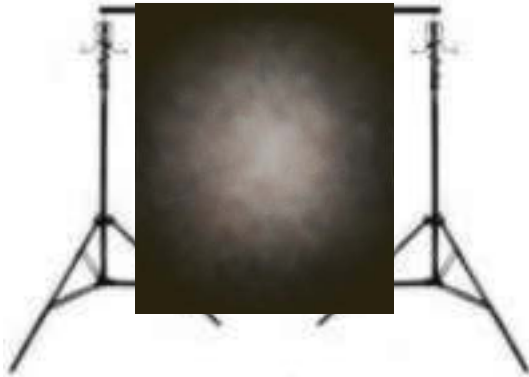
**Snoot**

# Additional Equipment

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**Tripod**



**Backdrop  
& Stand**



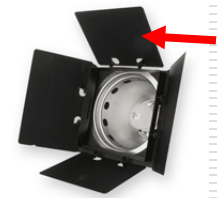
**Lighting Kits**



**Boom**



**Grids**



**Flags**



**Umbrella**



**Soft box**



**Brolly**



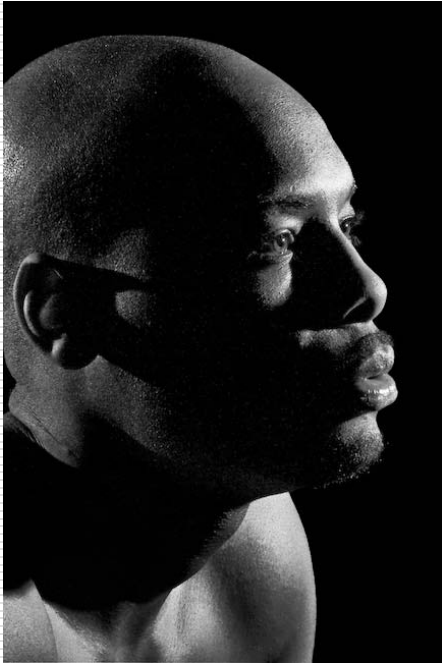
**Reflector**



**Snoot**

# Key Lighting

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**Low Key**

**Losing detail  
in the shadows**



**Mid Key**

**Detail in both shadows  
and highlights**

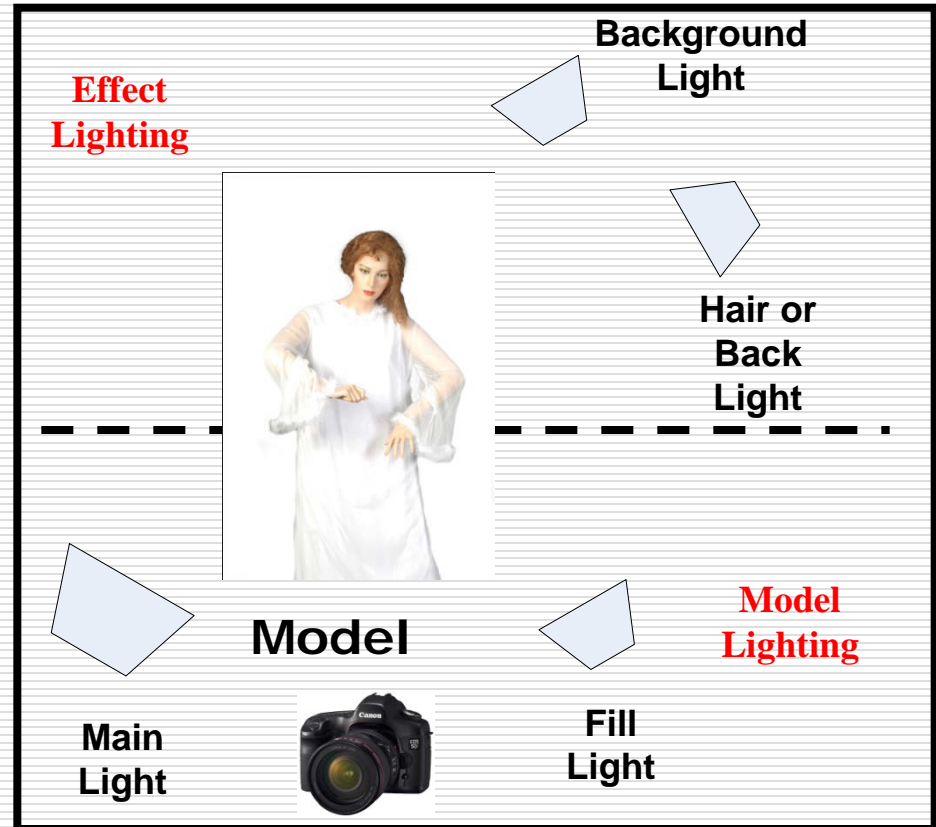


**High Key**

**Losing detail  
in the highlights**

# Four Light Studio Set Up

- **Main (or Key) Light** – serves as the main light for the model. A softbox is generally used as it provides a softer light and wraps the light around the model so as to give a 3D effect.
- **Fill Light** – fills in and softens the shadows caused by the main light and is generally not as strong as the main light. Increase fill to reduce contrast; Reduce fill to increase contrast.
- **Hair or Back Light** provides highlights for the hair and helps separate the model from the background.
- **Background light** separates the model from the background giving more of a 3D or less flat effect.



This is only one of numerous Studio light set ups



Main 30 Down



Main Level



Main 30 1200 100%  
Fill 30 600 50%



Main 30 1200 100%  
Fill 30 600 100%



Lowered Fill



M; F; Hairlight



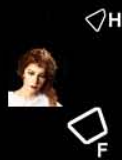
Hairlight; Low Fill



M; F; H; Background



M: F: H: BG behind Model



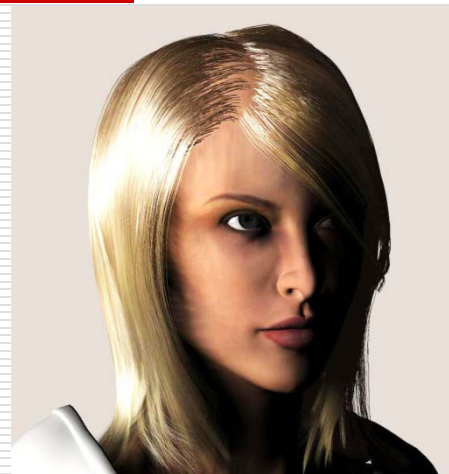
# Flat, Split, Broad, & Short Lighting

(only one light at head level)



## Flat

- Light from front of face, same height as head
- No shadows on face
- Face is flat, uninteresting
- De-emphasizes nose, widens face



## Broad

- Lit side of face is nearest to camera
- Widens face
- De-emphasizes facial texture



## Split Light

- Light is from side of head



## Short

- Lit side of face is farthest from camera
- Narrows face
- Emphasizes facial contours
- Generally used for male portraits

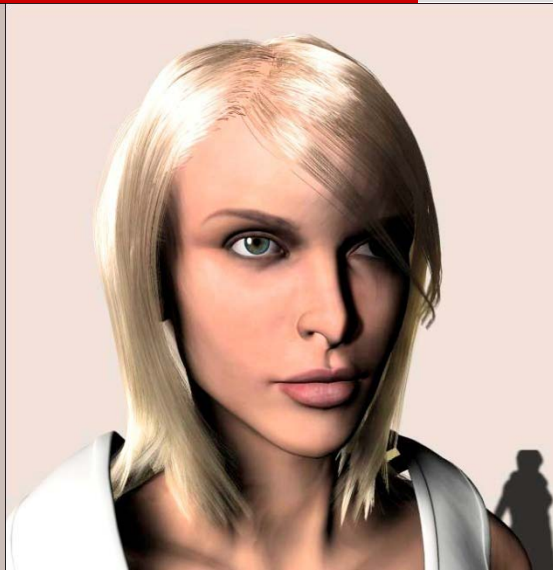
# Nose Shadow Lighting Types

(One Light, higher than split lighting)



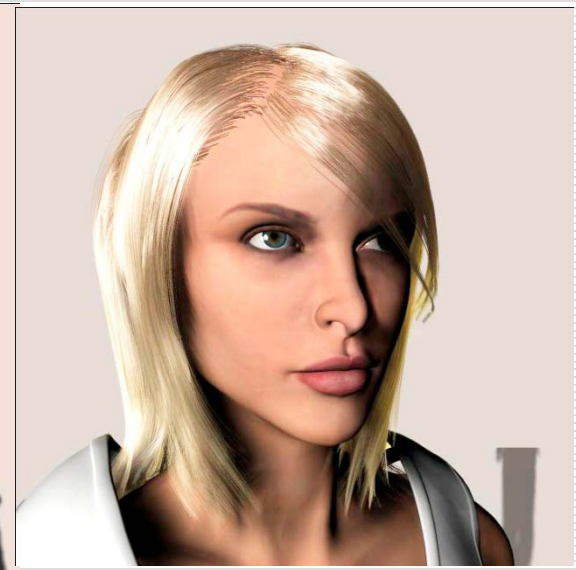
## Butterfly or Paramount

- Butterfly shadow underneath nose
- Shadow size depends on main height
- Used for Glamour photos
- Flattens features, narrows neck, emphasizes ears.



## Loop

- Main Light creates "loop" shadow of nose
- Emphasizes facial contours
- Narrows face

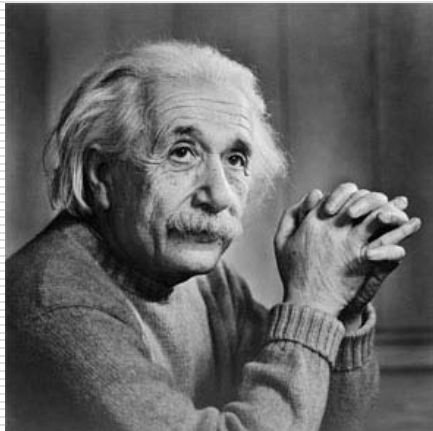


## Rembrandt

- Loop shadow meets cheek shadow to create triangle of light under eye.
- Vary dramatic effect
- Good for low key photos, usually with Short lighting

**All of these can be created by setting lights and rotating subject**

# What kind of lighting was used?



**Einstein**  
by Yousuf Karsh



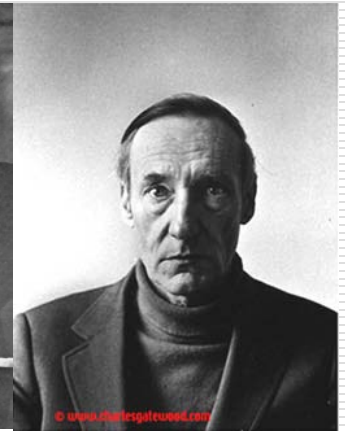
**Miley**  
by Annie Leibovitz



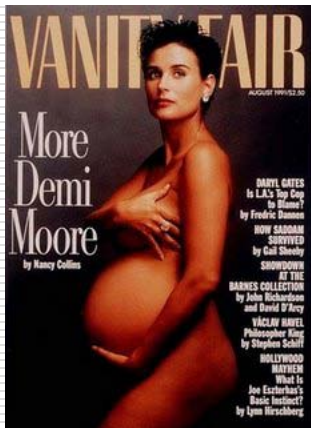
**Salvador Dali**  
by Fred Stein



**Churchill**  
by Yousuf Karsh



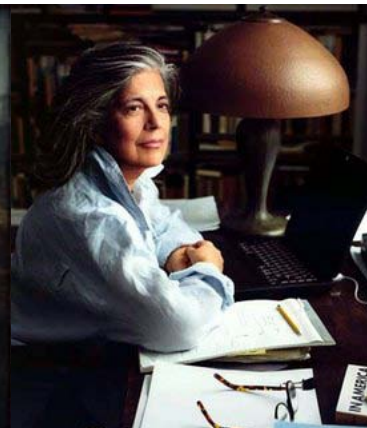
**William Burroughs**  
by Charles Gatewood



**Demi Moore**  
by Annie Leibovitz



**Mona Lisa**  
by Divinci



**Susan Sontag**  
by Annie Leibovitz

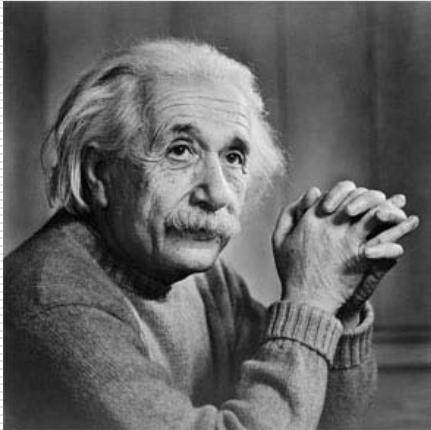


**Jody Foster**  
by Helmut Newton



**Artemis**  
by Rembrandt van Rijn

# What kind of lighting was used?



**Einstein**  
by Yousuf Karsh



**Miley**  
by Annie Leibovitz



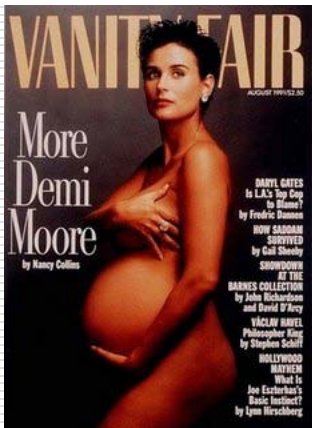
**Salvador Dali**  
by Fred Stein



**Churchill**  
by Yousuf Karsh



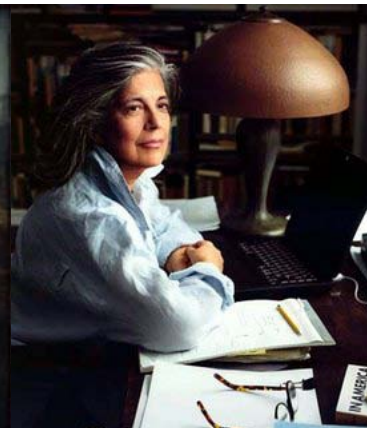
**William Burroughs**  
by Charles Gatewood



**Demi Moore**  
by Annie Leibovitz



**Mona Lisa**  
by Divinci



**Susan Sontag**  
by Annie Leibovitz



**Jody Foster**  
by Helmut Newton



**Artemis**  
by Rembrandt van Rijn

# Other Lighting Types

## Rim Light and Side Light

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**Used frequently in Artistic Nude Black & White Photography**

# Exposure Measurement

- In portrait photography the contrast between highlight areas and shadow areas is extremely important



**Incident Exposure Meter**

- Measurement of contrast can be done with an Incident Exposure Meter
- Typical Contrast measurements and results are:

Ratio	Stops difference	Description
1:1	No Difference	Flat Lighting
2:1	1 Stop	General Photography
3:1	1 1/2 Stop	General B&W Photography
4:1	2 Stops	Dramatic Low Key
8:1	3 Stops	Very Dramatic Low Key

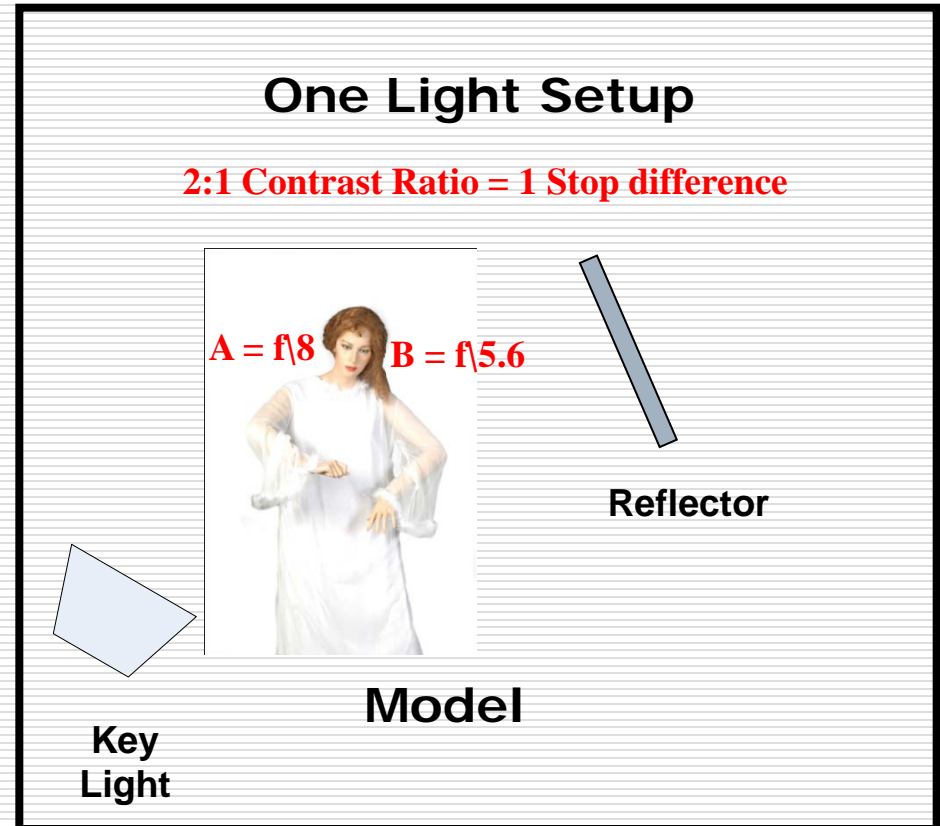
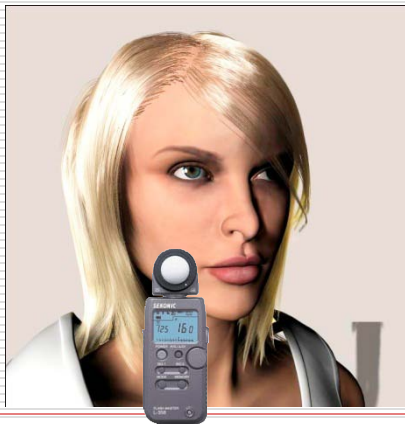
f/Stops 2.0 2.8 4 5.6 8 11 16 22

- **There is no "correct" contrast. It depends on what you as the photographer are looking for**



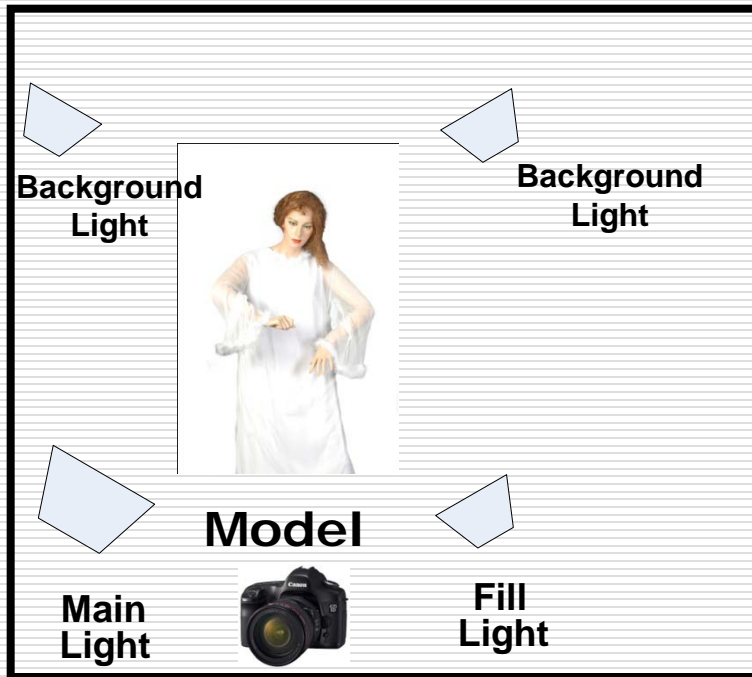
# Incident Light Measurement

- ❑ To set exposure, remove the reflector and measure the incident light at point A
- ❑ Replace the reflector and measure incident light at point B
- ❑ To measure hold the Incident Light Meter up to the subjects cheek
- ❑ Change Main light by increasing/decreasing Power
- ❑ Change Reflector by moving reflector closer or further back



This is only one of numerous Studio light set ups

# Effect Lighting



**Background in focus?** Do you want to blur the background by using a more open aperture - f/5.6, f/4, etc.? Set up the Main light to match your camera aperture.

Two Background lights will give you **balanced lighting**. Very important for high key lighting. For High Key f/16. don't overexpose (blow out)

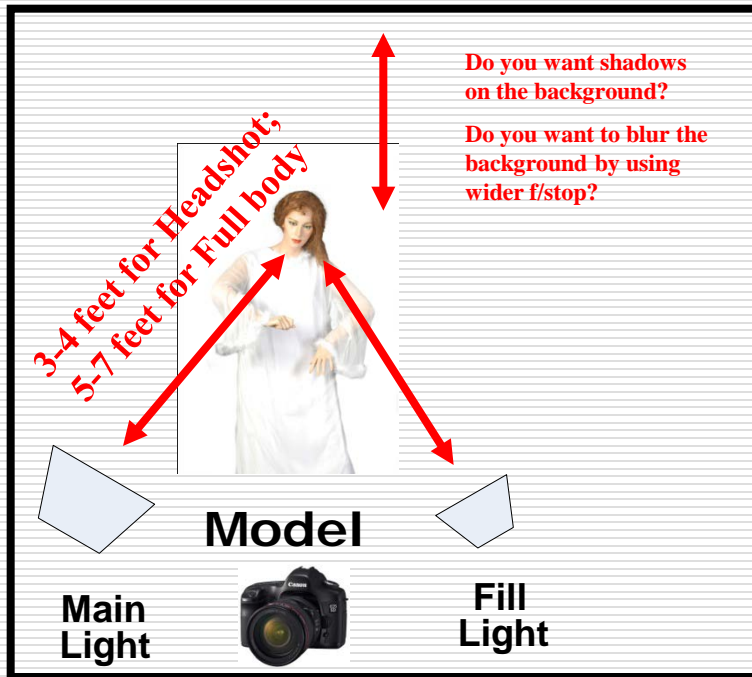
One light behind the model with a grid can place a **circle of light** behind the model's head effectively separating a dark haired model's head from a dark background.

You must be conscious of **background spill** (background reflection around the edges of the model. Can be used effectively or can cause unwanted light.

Background can be made lighter or darker by changing the shutter speed. A slower shutter speed will let in the **ambient light** in the room causing the background to get lighter

**Hair Light** can be implemented with a grid or a snoot pointed at the model's hair. Barn doors can be used to block unwanted light from the camera or model. Hair light should be one stop overexposed.

# Headshot, Half, Full Body



**Light falls off at the square of the distance**

- Distance from Lights to Model should be about the same as what you are shooting, i.e. 3-4 feet for head shot; 5-7 feet for Full body. If light is too far away it becomes a point source and doesn't wrap the head.
- As model's head rises, lights should go up, i.e. sitting to standing
- Distance of Model to background depends on whether you want shadows or blur on the background.

# Face detail

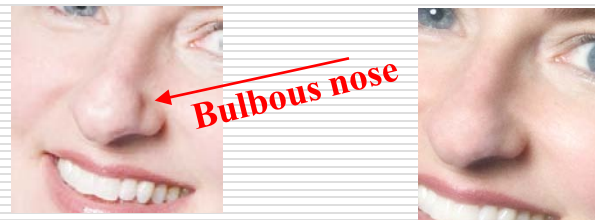
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- Eyes are most important part of portrait
- Set Camera slightly above eye height to get round pupil not cut off by lower eyelid
- Catch light in the eyes is a must
- Lips could use lip gloss to keep moisture
- Skin reflection – Powder puff
- Only thing that brings life to facial portrait is **The Photographer**
- Keep up a constant chatter with the model
- If you want them to have a smile, tell them a funny story. Don't take shot immediately. Wait a second until they relax the smile, then take the shot.

# Corrective Studio Techniques

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- ❑ Round Face – short Lighting
- ❑ Large Ears - don't shoot straight on
- ❑ Long Nose - Low camera angle
- ❑ Short Nose - high camera angle
- ❑ Large or bulging eyes – face toward camera. No catch light in white of eye
- ❑ Thinning hair – Don't use a hair light
- ❑ Try to hide problem features in shadows, i.e. scars or pimples
- ❑ Abnormally large features, reduce shadows to reduce size or flatten



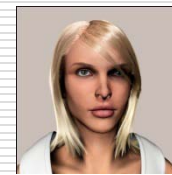
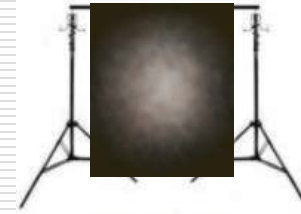
# Posing Techniques

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- Double Chin – Extend jaw toward camera
- Small eyes – turn chin toward camera
- Glasses
  - Remove
  - Tip forward
  - Tilt chin down or shoot from higher angle
- Angle shoulders from horizontal
- Tilt head slightly from vertical
- Half or Full Length
  - Don't crop photo at an arm or leg joint
  - If it bends, bend it
- Waistline problems
  - Pose in sitting position
  - No tight clothing
  - No slouching
- Hands
  - Man's hands must have strength
  - Woman's hands must have grace

# Exercise 1 – Light Direction

- Set up a background, a Hard Light (no umbrella or softbox), Camera, and Subject
- Light directly in front of the subject at head height. This will produce **Flat** Light on the subject's face (no shadows)
- Raise the light and note the butterfly shadow under the nose.
- Rotate the light through the positions at left and note the shadows on the face
- Place the Light at a 30° Angle (loop position), and Rotate the model. Butterfly, Loop, Rembrandt, and Split, can all be created by rotating the model.



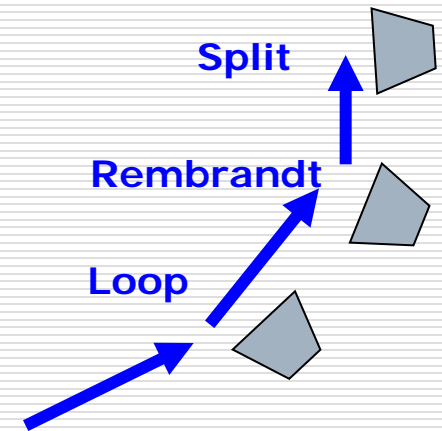
Model

Flat



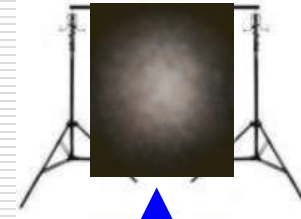
Light

Raise  
Light for  
Butterfly



# Exercise 2. Light Distance

- ❑ Set up Flat or Butterfly lighting on the Model with Hard Light
- ❑ Vary the distance between Model & Background and note shadows appearing on the Background
- ❑ Vary the Light to Model distance and note the effect light has on the model (wrap)



**Model**

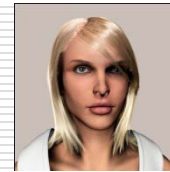
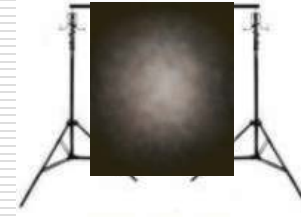


**Light**

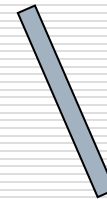
# Exercise 3. Light Color

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- Add a reflector to the set up
- Note the effect on the nose shadow
- Change the color of the reflector from cold to warm.



**Model**



**Reflector**



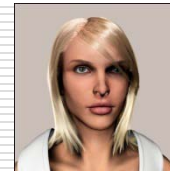
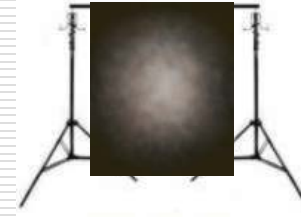
**Loop**



# Exercise 3. Light Color

---

- Add a reflector to the set up
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**Model**



**Reflector**



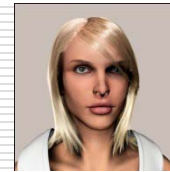
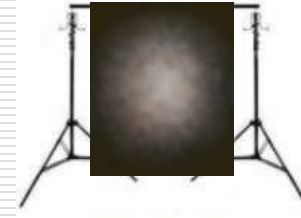
**Loop**



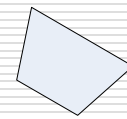
# Exercise 4. Light Quality

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- Experiment with multiple ways to soften the Hard Light you have been using:
  - Reflecting umbrella
  - See through umbrella
  - Soft Box
  - Soft Box & Reflector
  - Soft Box & Umbrella



**Model**



**Main Light**



**Fill Light**



# Exercise 5. Effect Lights

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- Set up four or five light set using Main Light, Fill Light, Background Light, Hair Light.
- Measure each Light with exposure meter and take photos for reference.