

Night Photography Outline

Research

- Decide what you want to shoot
 - Milky Way
 - Stars
 - Moon
 - City Scapes
 - Signs
 - Street Portraits
 - Building
 - Car headlights and taillights – streaking
 - Leading Lines of or to a building
 - Look for unique angles
 - Water with lights reflecting off buildings
 - Backlighting a statue
 - Other
 - Know where to point your camera

- Decide on a location
 - Possible Locations around the Upstate of SC
 - Table Rock Field / Visitor's Center
 - Bald Rock
 - Pretty Place
 - Sassafras Mountain
 - Eastatoe Valley (from bridge)
 - Downtown Greenville
 - Location where there is NO light Pollution
 - Scout the location during the day
 - Best place to stand
 - Use Photo Pills App to help with location
 - Consider testing several lens
 - Any obstacles to be aware of
 - Potholes (if shooting over a road)
 - Fences
 - Possible Composition locations
 - Look for Triangles / Leading Lines, etc
 - Check on weather the evening of the Photo Shoot
 - Clear Skies – No clouds unless they are real puffy and you can see the stars through the clouds
 - Consider some type of water foreground - reflections

- When is the best time to go
 - Milky Way
 - June – Aug (Milky Way is almost vertical)
 - Best when No Moon is present (New Moon)
 - Consider having a foreground object

Equipment (this listing is ideal, but not all required)

- Camera – Full Frame is the best
- Extra Batteries
 - Always start off with a fully charged battery
- Tripod
 - Keep your camera steady for Long Exposures
 - Velcro Tape on legs (hold remote)
- Flashlight / Head Lamp – with red light / Cell Phone
 - Flashlight – may want to use to draw attention to or simply lighten up an important part of the foreground which is too dark
 - Red light will help you keep your night vision once your eyes become accustomed to the dark. It will also help you when you are moving around in the dark.
- Lens
 - Ideal Lens
 - Fisheye – 14mm F2.8
 - Wide Angle Lens 16-35mm F2.8
 - 24 – 70 mm F2.8
 - Wide Angle lens shows less movement
 - Lens Hood – block out flare from other light sources
 - **Remove all Filters**
 - However you may need to use ND filter to get the area dark enough
 - Lens Cloth – to remove moisture (from dew)
 - If you are in cold weather conditions or summer humidity
 - Consider hand or feet warmers for the lens and camera
 - Attach to lens with rubber band
- Remote Cable (shutter) Release / Self Timer / Auto
- Right angle attachment for the view finder
- A Hoodman Loop
- Warm Clothing even in the summer time (layers)
- Rain Gear (to protect camera and lens from nighttime dew)
- Water or something hot (cold weather)
- Flash (if you want to light up something in the foreground)
- Gaffer Tape (attach to tripod leg)
 - May use it to tape down camera focus setting
 - And to cover up any lights coming off the camera
- Waste pouch – to hold flash lights, etc
- Towel to put on ground to put equipment on
- Note pad to make notes on
- Bug repellent
- Chair or stool
- Tell someone where you are going and time to be back
- Map and Compass
- Use red transparent adhesive
 - Cut up to fit on the back of LCD
 - Cuts down on the white light coming from the LCD
- Be sure your memory card is formatted (in the camera you are using) and consider on having extra formatted memory cards with you.

Camera Settings

- **many cases this will be trial and error**
- Shoot Raw
- Be sure Long Exposure is turned OFF (camera setup)
- Consider lowering the LCD light on back of camera (Setup)
- Shutter Speed use 500 rule
 - 500/focal length of lens
 - Ex. 500/24mm = around 20 seconds
 - This is for Full Frame Cameras
 - For a Crop Sensor – divide 500 by the crop sensor size
- **Twilight** (also known as the blue hour)
 - 15 – 20 minutes after sunset
 - Aperture Priority (AP)
 - F8 or F16 (if there is something in the foreground)
 - Lowest ISO possible
 - Let camera determine the shutter speed (if using a tripod)
- **Night Settings**
 - **Cityscapes**
 - Set WB to Auto (can adjust in Post if shooting Raw)
 - Shoot in Aperture Mode or Manual (F8 – F12)
 - If you want a star burst from city lights – shoot F16
 - Use lowest ISO
 - If shooting AP – let camera set the Shutter Speed
 - Be prepared for long exposures
 - Use slow shutter speed
 - 10 / 20 / 30 of a second
 - Review each shot to select the best settings
 - Maybe able to use Auto Focus if the camera can focus on a object
 - If not use manual
 - Consider using Live View – Magif. 10x
 - **Stars**
 - Start with 25 seconds at lowest aperture possible - with ISO 1600 for static photo
 - Ex. F2.8
 - May have to go up to 3200 or 6400 ISO
 - The higher the ISO, the more noise you will get
 - Anything over 30 seconds – star trails will appear
 - Experiment
 - For long exposures with definite Star Trail – use the Bulb mode
 - Trial and Error
 - Use Histogram to check exposure (don't trust your eye)

- Use Daylight (WB) – can change in Post
 - If possible include something in the foreground – Ex. Mt
 - Set camera to bracket up to 5 stops (two under and two over and one normal)
 - May want to combine them in HDR
 - Check the Virtual Horizon Line
 - To get Star Trails
 - Use the Bulb mode
 - May need 30-60 minutes to get a good one
 - Trial and Error
 - **Focus**
 - What you focus on needs to be sharp
 - Focusing on Infinity will NOT work on stars
 - Focusing Methods
 - Auto Focus on the Moon
 - Turn off Auto Focus
 - Then tape down the lens focusing ring so it will not move (holds focus in place)
 - Focus for a Subject
 - Auto Focus on distant subject (during the day)
 - Mark the location on where the tripod is sitting
 - Wait for night fall
 - Return to the locations and placement of tripod
 - Can use a Laser Pointer to help focus on the subject at a distance
 - Can use Flash for focus assist
 - Let flash auto focus the lens
 - Then turn off both the flash and Auto focus
 - Live View
 - Turn on Live View
 - Find the brightness star and place it in the middle of the LCD
 - Turn off Auto Focus
 - Set lens to infinity or a near focal point
 - Magnify 10x
 - Manually turn the lens until the star is the sharpest
 - Use a Loop to help
- **Note this is the same for the Milky Way**

- **Milky Way**
 - Shutter Speed – 30 sec or less
 - At 30 sec, you will see star trails
 - Ex.
 - 16 mm – 25 sec
 - 24 mm – 20 sec
 - 35 mm – 15 sec
 - Can use a faster shutter speed to slow down movement
 - Aperture – 2.8 or lower
 - Less Noise
 - ISO – 3200 – 6400 dark skies
 - If there is a moon – F4.0 and lower the ISO

- **Moon**
 - Shooting the moon, need at least 300 mm lens however, 500 would be better
 - Best time is in twilight
 - Do not wash it out with too much light
 - Shoot at F11
 - Shutter speed 1/125 sec
 - ISO – 200
 - Test and adjust
 - If full can be very bright
 - Shoot at F16 at 1/200 of a second
 - Rule of Thumb is that the moon appears to move its own diameter roughly every 2 minutes.
 - Keep this in mind for very long exposures 10 min or more
 - Use the Moon to add composition to your photo
 - Use Auto Focus and/or Live View
 - Best time to photograph it is 2 days before the Full Moon at sunset
 - Photo at Sunrise
 - 1 or 2 days after Full Moon
 - Look for a Crescent Moon (around New Moon time)

Composition

- Carefully study the scene
- Are parts of the scene in total darkness
- Does the composition look better with dark areas or lighted areas
- Look for objects in the foreground and/or background
- Zoom in with the your lens or feet
- Look for light trails
 - Over water – look for different colors
 - Car Lights (try F8 for 30 sec)
- Look for Silhouettes

Misc

- Safety First – always go with a friend or group
- If you have to hand hold your camera, consider using the Program Mode
- Want to keep a person recognizable – shoot with a fast shutter speed
- To blur a crowd or lose them entirely, use a slow shutter speed 10-30 sec
- Consider lowering your Screen brightness during Playback so you won't interfere with other photographers
- Turn off auto image playback
- Get to your location before dark so you can set up while there is a little daylight present

Light Painting

- Adding Light to an object
- Consider light painting with foreground object and stars in the background
- Light Sources
 - Headlamp (with red color)
 - Sparklers, lanterns, glow sticks, strobe and /or candles
 - Consider
 - Bolt 2 L flashlight by Inva (www.invalight.com)
 - Brinkman Max Million –Spot/flood -2000 candle power
 - 30 charge time
 - Can use filters (gels) red/yellow/blue
 - Honey comb grid – 10 degrees
 - Close View Finder (on camera) – no extra light
 - Exposure time 20-30 sec
 - Paint with broad, random overlapping passes
 - Start at ISO 3200/6400 for 4 seconds
 - Test – Test – Test

Post Processing

- Use LR / PS
- LR
 - White Balance
 - Increase Contrast and Whites
 - Work with Clarity
 - Increase – Vibrancy and Saturation
 - Reduce Noise – use Luminance
 - Use Lens Correction

Apps

- Photo Pills, Dark skies, Star Walk

Shutter Speed Chart for Stars and Milky Way

- Try to keep your shutter speed within the chart below.

	<i>Full Frame Sensor</i>	<i>Crop Sensor</i>
14mm	30 seconds	
16mm	25 Seconds	20 Seconds
24mm	20 Seconds	13 Seconds
35mm	15 Seconds	10 Seconds