

# Night Visions

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**Silver Spring Camera Club**  
**February 1, 2018**



# DSLR Cameras and Lenses

- **Single-lens reflex camera**
  - Shutter speeds of 30 seconds
  - Bulb setting for exposures of 31 seconds and longer
  - Manual setting
  - Exposure compensation
  - Cable release, timer, and mirror lock-up
- **Lens with large maximum aperture ( $f/1.4$  to  $f/2.8$ )**
  - Prime lens or high quality zoom lens (*to minimize lens flare and take advantage of larger apertures*)
  - Larger maximum apertures increase viewfinder brightness (*useful for composing images in low light*)
  - Larger maximum apertures allow faster shutter speeds (*useful if you don't have access to a tripod*)

# Other Equipment

- **Mirrorless, point-and-shoot, and cell phone cameras**
  - Most are usable up to at least ISO 800/1600
  - Need ability to override automatic settings (*e.g., turn off auto flash, override auto exposure, exposure compensation*)
  - Best to use camera/lens with larger maximum apertures
- **Useful tools**
  - Tripod
  - Cable release
  - Lens shade (*to minimize flare*)
  - Flashlight (*to illuminate a scene and assist with focusing*)
  - Smartphone (*flashlight, stopwatch/timer, apps, online access to technical information, and reading materials for long exposures*)

# Tips for Taking Night Photos

- **Don't be seduced by digital's high ISO capabilities**
  - Use native ISO for lowest noise and best dynamic range
- **Set ISO manually** (*do not set camera on auto-ISO*)
- **Set camera on manual or aperture priority**
  - On some cameras, flash will go off in auto mode
- **Set aperture between f/5.6 and f/8.0**
- **Use RAW and Auto White Balance**
- **Set picture style to neutral**
- **Use center-weighted metering**
- **Bracket exposures** (*e.g., keep aperture constant and change shutter speed*)

# Tips for Taking Night Photos

- Use RGB histogram and LCD to make corrections
- Pay attention to light sources when composing images and determining exposure
  - Remove light source from your image
  - Evaluate scene to counterbalance highlights and shadows
  - Overexpose if a light source dominates the frame
  - Underexpose if the image is very dark—but watch out for noise
- Remove UV filter from your lens
- Experiment with in-camera settings (*e.g., in-camera HDR, long exposure noise reduction, high-ISO noise reduction*)
- Turn off IS/VR lens function when using a tripod
- Review data to learn from success/mistakes

# Post Processing Tools

- White Balance (*in RAW*)
- Highlights and Clarity (*in RAW*)
- Spot Healing Brush Tool (*to remove dust and extreme lens flare*)
- Crop
- Quick Selection Tool
- Curves and Levels
- Brightness/Contrast
- Auto Tone and Auto Color
- Noise Reduction
- Black and White

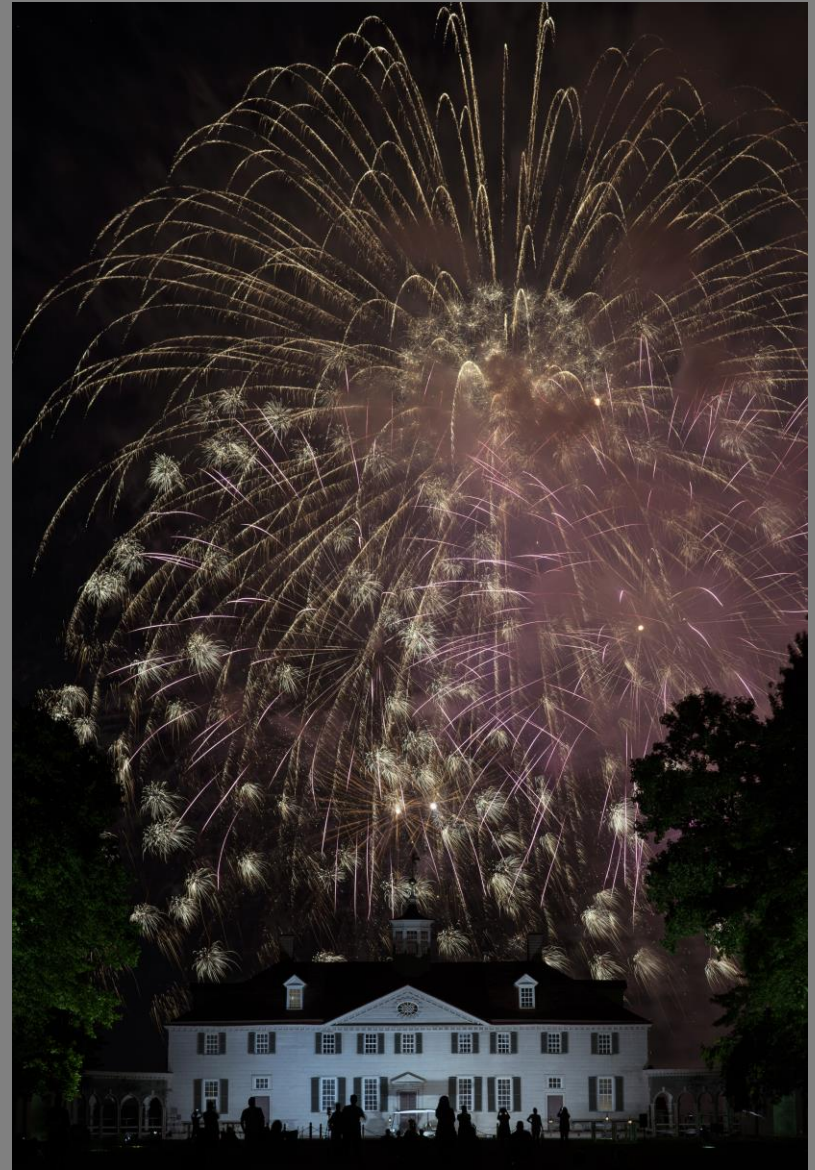
# Photographing People at Night

- Use a higher ISO
- Use a fast prime lens
  - 35mm f/1.4
  - 50mm f/1.4
  - 85mm f/1.8
- Use a wider aperture and faster shutter speed
- Person does not need to dominate the image



# Photographing Fireworks

- Use a lower ISO (*or not*)
- Use manual focus
- Set shutter speed & aperture manually
- Review images in LCD and adjust exposure as necessary
- Keep aperture constant and experiment with shutter speeds
- Include an object in the foreground





# Photographing Stars

- Shoot when there is no moon in the sky (OK if there are some clouds)
- Use higher ISO
- Set focus, shutter speed, and aperture manually
- Keep exposure between 4-30 seconds
- Overexpose first shot (*to assist with framing*) and review images in LCD
- Include an object in the foreground



# Photographing the Moon

- Try for the night before or night of the full moon and use a telephoto lens
- On other nights:
  - Use a wider angle lens
  - Hide the moon behind clouds
  - Use a graduated neutral-density filter
  - Shoot a quarter or half moon
  - Double expose the moon into a scene



# Photographing Ferris Wheels

- Use lowest possible ISO
- Include stationary object in the foreground
- Use a smaller aperture—and the longest possible shutter speed
- Use a tripod





# Photographing Lightning

- Use native ISO
- Set shutter speed and aperture manually
- 10-20 seconds
- f/8
- Bracket
- Stay safe!



# Night Photo Books: How To

- **Night Photography and Light Painting: Finding Your Way in the Dark** (*Lance Keimig, 2016*)
- **Night Photography: From Snapshots to Great Shots** (*Gabriel Biderman with Tim Cooper, 2014*)
- **Creative Night: Digital Photography Tips and Techniques** (*Harold Davis, 2010*)
- **Night & Low Light Photography: Professional Techniques From Experts For Artistic and Commercial Success** (*Jill Waterman, 2008*)
- **Digital Night and Low-Light Photography** (*Tim Gartside, 2006*)
- **Night Photography** (*Andrew Sanderson, 2002*)

# Night Photo Books: What To

- **Paris by Night** (*Brassaï, 1933*)
- **Paris Minuit** (*Parigramme.com, 2013*)
- **Washington by Night** (*Volkmar Wentzel, 1992*)
- **America's Last Steam Railroad: Steam, Steel, & Stars** (*O. Winston Link, 1987*)
- **AIR** (*Vincent Laforet, 2015*)
- **Astronomy Photographer of the Year: Prize Winning Images of Top Astrophotographers** (*Royal Observatory Greenwich, 2015*)
- **Night Vision: The Art of Urban Exploration** (*Troy Paiva, 2008*)
- **Night: Photographs of Magnum Photos** (*Magnum Photos, 1998*)
- **Acquainted with the Night** (*Lynn Saville, 1997*)
- **Frontier New York** (*Jan Staller, 1988*)
- **Night Vision: Magical Photographs of Life After Dark** (*Susan Tyler Hitchcock, National Geographic, 2017*)

# Night Photo Websites

- <http://nightvisionsphotography.com>
- <http://www.thenocturnes.com>
- <http://www.darknessdarkness.com>
- <http://www.thenightskye.com>
- <http://lostamerica.com>
- <http://www.twanight.org/newTWAN/index.asp>
- <http://roaminwithroman.com/night>