

Notes for George Lepp's Seminar
INNOVATIVE TECHNIQUES
Featured Web Sites, Products, and Techniques

EQUIPMENT

Tripods:

Gitzo 1541 Traveler and 2531 Mountaineer (travel)
Gitzo GT2541 EX Explorer (4 sections/G-lock)
Gitzo GT3541 (heavy-duty)
Really Right Stuff

Ball Heads:

Arca Swiss
RRS BH 55 or RRS BH 40 (Really Right Stuff)
Kirk Enterprises
Gitzo/Bogen

Sensor Debris Test:

1. Lens at minimum aperture (f/16-f/22)
2. Set focus to infinity
3. Exposure at plus 1
4. Photograph white or grey sheet
5. View in Photoshop at 100% magnification

www.cleaningdigitalcameras.com

SensorScope, Sensor Pen, www.micro-tools.com

LCD Viewing:

Set LCD to the middle brightness setting to match histogram
Hoodman 3" Loupe for viewing in bright light
Hoodman Cine Strap or Crane for DSLR Video
<http://www.HoodmanUSA.com>

Filters:

Singh-Ray LB Color Combo, Vari-ND (2-8 stops), and Mor-Slo 5, 10, 15 stop (www.singh-ray.com)

Infrared (IR) Conversions of DSLRs:

www.LifePixel.com

Capturing Lightning During the Day

Lightning Bug: www.mkcontrols.com
Lightning Trigger: www.lightningtrigger.com

Projected Flash

Better Beamer – www.BirdsAsArt.com \$40
MagBeam – <https://magnetmod.com/shop/magbeam-wildlife-kit/> \$74.95

Canon Macro Flash

Canon MT-24EX and Canon MR-14EX

CamRanger

CamRanger (www.camranger.com) is an excellent tool to monitor images on an iPhone or iPad when doing stacking or working in difficult positions. Also has stacking mode.

StackShot Rail Macro (<http://www.cognisys-inc.com>)

Precise focus stacking movements from 2 microns to 200mm. Can also be used in the field with an optional battery pack. Two sized rails available.

PRODUCTS and PROCEDURES for SPECIAL TECHNIQUES

EXTENDED DEPTH OF FIELD (STACKING) FOR ALL SUBJECTS (WORKS FOR MACRO AND LANDSCAPE):

Procedure:

1. Tripod or copy stand (focusing rail)
2. Manual ambient exposure or electronic flash
3. Choose best f/stop; note diffraction problems exist at higher f/stops with higher magnification
4. Set manual white balance (usually flash or sun)
5. Subject cannot move
6. Manually refocus each image or use **StackShot**
7. Overlap in-focus areas
8. Watch for large foreground objects that "bloom" out of focus
9. Composite with Photoshop CS/4, 5, 6 or CC; Helicon Focus software; or Zerene Stacker (see below).

Canon EOS Utility

Download the newest version 3 from Canon

Can monitor stacking and control basic stacking within the program.

Photoshop CS/4-CC 2017

Auto align
Auto-blend layers

Helicon Focus 6 Windows

Helicon Focus 6 Mac OS

<http://www.heliconfocus.com/>

For Mac and Windows
Light Version from \$30 (1 year license)
to \$115 (full license)
Pro Version from \$55 (1 year license)
to \$200 (full license)
Pro X64 \$250

Zerene Stacker

www.zereneystems.com/stacker

Mac or PC
Professional Edition (Pro User) \$289
Prosumer Edition \$189
Personal Edition \$89
Student \$39

More on Depth of Field: George and Kathryn's article, "In Search of Sharpness: How to take control of depth of field in the camera and the computer" was published in *Outdoor Photographer's* January-February 2013 issue. See it at <http://www.outdoorphotographer.com/how-to/shooting/in-search-of-sharpness.html>.

PANORAMAS:**Kinds of Panoramas**

Composite Panos
 Macro Panos
 HDR Combination Panos
 Hand-held Panos
 Gigapans
 Aerial Panos
 Action Sequence Panos

Composite Panorama Procedures:

1. Level the tripod
- Bogen #3502 Compact Leveling Head
- Bogen Leveling Center column, #554, 555, 556
2. Level the camera—use a bubble level (two axis)
3. Set exposure to manual
4. Set a manual white balance (day)
5. Check the pan area
6. Photograph w/20% to 50% overlap
7. Bracket the set

Stitch panoramas in:

Photoshop CS3/4/5/6/CC PhotoMerge
 AutoPano Pro 3, AutoPano Giga 3 www.kolor.com
 Gigapan Software: www.gigapan.com/cms/shop/software

Horizontal (and vertical, if needed) panoramas can extend the DOF by slight changes in focus between each image. The DOF must overlap in each image.

Composite Macro Panorama Procedures (using a telephoto macro lens):

Use procedures and stitching software as above. I use the Canon 180mm macro lens w/2X tele-extender for many of my composite macro/close-up panoramas

If using Canon EOS cameras consider setting “Silent LV shoot” mode 1 to eliminate mirror vibration. Disable after use so as to not slow down the camera’s frame rate.

Extending Depth of Field in Panoramas within Macro/Close-up:

Examples of DOF for Canon 65mm
 1X-5X Macro lens. DOF is minimal!!

Magnification	f/2.8	f/4	f/5.6	f/8	f/11	f/16
1×	0.396	0.560	0.792	1.120	1.584	2.240
2×	0.148	0.210	0.297	0.420	0.594	0.840
3×	0.088	0.124	0.176	0.249	0.352	0.498
4×	0.062	0.088	0.124	0.175	0.247	0.350
5×	0.048	0.067	0.095	0.134	0.190	0.269

*Measured in mm

Really Right Stuff (reallyrightstuff.com) Ultimate Omni-Pivot Package for multiple images using a tele-macro lens in rows and columns

Stackshot can be used to capture full depth of field in each position of the panorama; first assemble the stacked images, then assemble the pano.

Source of butterflies and insects to photograph:
<http://www.butterfliesandthings.com/>.

Combination Panoramas using High Dynamic Range (Contrast Control & Creative Effects):

Options:

HDR CS-5/6/CC (see below: Merge to HDR Pro)
 Photomatix Pro HDR – www.hdrsoft.com \$99
 (for HDR and creative effects)
 Pangea-Bracketeer, www.pangeasoft.net/pano/bracketeer 19.95
 Nik HDR Efex Pro www.niksoftware.com Free
 HDR Expose
<http://pinnacleimaging.com/products/hdr-expose-3>
 \$149

Procedure:

1. Tripod
2. Minimum of three exposures
3. Expose for lightest area –1 stop
4. One full stop increments
5. Finish with exposures for darkest area + 1 Stop

Handheld: Set camera for auto-bracketing: two stops under, on for middle tones, two stops over-exposed. Set camera to multiple exposures.

CS-5/6/CC 2017 – Merge to HDR Pro: Use steps found in Bridge >Tools>Photoshop> Merge to HDR Pro

Single-Capture HDR (Photomatix)

1. Start with one RAW capture
2. Output the image three times (ARC)
 - a) Once at normal exposure
 - b) Once at a plus 2-stop
 - c) Once at a minus 2-stop
3. Process the three images in Photomatix
4. Process again in Topaz Plug-in

Single-Capture HDR (CS-5/6/CC HDR Toning)

1. CS5/6/CC> Image> Adjustments> HDR Toning
2. Process as if a multiple capture

GigaPan High Resolution Multiple-image Composites

www.Gigapan.com

<http://www.omegabrandess.com/gigapan>

Aerial Panoramas

Classic aerial panos are captured from a plane or helicopter by taking a series of images as quickly as possible, and then using standard composite techniques in the computer.

For an aerial mapping panorama, on the ground or in the air, rather than rotating the camera from a fixed point as in a basic composite, move the camera for each capture so that the subject is always parallel to the camera, overlapping by at least 50% in each capture. From an airplane, the movement of the platform repositions the camera.

Action Sequence Panoramas

1. Follow the action subject with the motor drive continuing without interruption.
2. Chose a series of images that do not overlap the subject (usually every other or third image) to make up the panorama sequence.
3. In Photoshop Raw Converter or Lightroom, size and optimize the images to the size you intend to make the height of the pano.
4. In Photoshop make a blank canvas that will be long enough for all the overlapping sequences in the pano.
5. Drop the sequence in order on the canvas and using "Layer Masks" place the sequences to assemble the Action Sequence Panorama.

More information and screen captures about wildlife and action sequence panorama processes are available in our articles in the February 2012 and October 2012 issues of *Outdoor Photographer* magazine. See <http://www.outdoorphotographer.com/how-to/shooting/wildlife-panoramas.html> and <http://www.outdoorphotographer.com/how-to/shooting/action-sequence-panoramas.html>

SOFTWARE, EQUIPMENT AND PROCEDURES FOR TIMELAPSE

Time-Lapse Considerations

1. Clean the camera sensor
2. Camera on a tripod
3. Adequate power supply
4. Exposure set to manual
5. Manual White Balance
6. Select the interval
7. Content considerations
8. JPEG at HD, 2K, or 4K
9. Process with "QuickTime Pro" or "Sequence"

Time-Lapse Equipment

You need an intervalometer:
 Canon TC-80N3, 7D MK II and 5D MK IV have it built-in
 Nikon built-in
 Phottix Aion (Amazon - \$84.95)
 Michron (\$59.00), www.alpinelaboratories.com

Radian by Alpine Labs for Time-Lapse panoramas
www.alpinelaboratories.com (\$250)

Sliders for moving Time-Lapses

Time Lapse Workflow

Take photo series > download into folder on computer > load into Lightroom > select all > go to "Develop" module and optimize one of the images > "sync" > Export at the size you want (probably 1920x1080). Render in software.

Time-Lapse Software

QuickTime 7 Pro – www.apple.com (\$29.99) Apple is not supporting QuickTime 7 and 7Pro anymore.

Some Help here: <https://support.apple.com/en-us/HT201175>

Works with both Mac and Windows

Sequence 2.0 – www.frosthaus.com (\$34.99)

Will also remove flicker (excellent program)

Note re: QuickTime Pro (Version 7) for Mac

QuickTime Pro for Mac will not load properly because of another version of QuickTime that is now included with the latest IOS versions for Mac. The answer is to download QuickTime Pro for Mac (Version 7) to your desktop and then move the application into your "Utilities" folder. Open it from there and put it permanently in your "Dock".

Time Lapse (movies from your digital SLR or iPhone):

Canon: Intervalometer TC 80N3, 7D MK II and 5D MK IV have it built in.

Nikon: some cameras have intervalometer built in, or add Intervalometer MC-36

iPhone App – iLapse

Time-Lapse Procedure:

1. Clean your camera's sensor
2. Camera on a tripod
3. Adequate power supply
4. Exposure set to "Aperture Priority"; use Auto-ISO if lighting conditions will be changing and you want to maintain f/stop and shutter speed
5. Select the capture interval, e.g. 5 seconds
6. Content Considerations
7. Next to Smallest JPEG
8. Sync-process optimization first in Lightroom
9. Assemble in "QuickTime Pro" (\$29.95)

VIDEO TIPS:

Minimal or Slow movement of camera

Minimal zooms

Tripod Recommended

Pans need special fluid tripod head

Steady!

Hoodman Loupe and Crane, or Cine Strap for LCD viewing

Editing Software: iMovie (Mac) or Premier

Elements (Windows/Mac)

Computer with capable power and video card

Tell a story and keep it short!

Camera Settings for Video

Canon Settings – ALL-I - Less compression, more quality

IPB – More compression, less video quality

Nikon Setting – 1920x1080, 30 fps, High Movie Quality

Frames per Second

30 fps – Normal setting with a 1/60th shutter speed

60 fps – To smooth video or improve look of slow

motion when slowing in post production. Faster shutter speeds for stopping action in slow motion.

iPhone Video Possibilities

- 240 fps Slow Motion
- Time-Lapse with apps
- It's in your pocket (Always ready)
- Best iPhone Time-Lapse is with app "iLapse"

Hold the phone equipment: 11-inch articulating friction magic arm clamp made by Sevesto, and MeFoto clamp for smart phones, both available from Amazon.com

Video Autofocus

Canon D70, D80, D77, 7D MK II, 5D MK IV, 1D x MK II all have AF in video

Video Editing Programs

- iMovie – Mac only, beginning program
- Premiere Elements – Beginning program for Mac and Windows
- Adobe Premiere – Advanced program for Mac and Windows
- Final Cut Pro X – Mac only

Licensed Music Downloads

- AKM Music (www.akmmusic.co.uk)
- BeatPick (www.beatpick.com)
- SmartSound (www.smartsound.com)
- Melodyloops (www.melodyloops.com)

See George's Videos on Vimeo:

Go to <https://vimeo.com/georgelepp/videos>

4K Video Frame grabs

<http://learn.usa.canon.com/resources/articles/2016/lepp-4k-frame-grabs.shtml?categoryId=22>

CINEMAGRAPHS

Cinemagraphs are still images containing one or more moving elements. These are usually derived from video clips by applying software found in Photoshop, After Effects, or a program called Flixel.

Cinemagraphs in Photoshop:

https://www.youtube.com/watch?v=2DU0Sim_BJ4
<https://www.youtube.com/watch?v=TKA4cqV0IjE>

Finding the right clip is not easy; it must be of high quality (taken from a tripod) and contain an element that, if moving alone, surprises, enlightens, or amuses the viewer. Once you understand the concept and program you will imagine and intentionally capture your own clips for this purpose.

Workflow: Take a video clip and place it in the Flixel program > the program will give you a 10 second range of the video to choose > you can move this within the video clip. > the first frame will be the still and whatever area you remove with the mask will continue to move in the clip.

The software to make this easy is Flixel: fixel.com

Download the trial to get started. For Mac, \$99.99. Can be often found on sale with a bundle of software.

FAUX MAT FOR YOUR PRINTS:

See George's web site for full instructions:
<http://www.georgeleppimages.com>. Click on "Articles," then see "Creating a Faux Mat"

Read George's monthly column, "Tech Tips," in *Outdoor Photographer Magazine*. Many of George and Kathryn's articles in the magazine can be found on the website (<http://www.outdoorphotographer.com/perspectives/george-lepp/>)

Follow George on Facebook at <http://www.facebook.com/georgelepp> and see more articles, images and tips at www.GeorgeLeppImages.com

Canon USA interviewed George about his experiences with the new EF 100-400mm f/4.5-5.6L IS II lens, an optic long awaited by nature photographers! See the interview at http://www.learn.usa.canon.com/galleries/galleries/sample_images/ef100_400mm_f45-56l_is_ii_usm_lepp_gallery.shtml.

Canon will has addition articles on its website: <http://www.learn.usa.canon.com/dlc/search/search.spr?keyword=George+Lepp> about George using Canon cameras for landscape and macro photography. This link will give you a list of George's articles on the Canon website.

This list of products used by George D. Lepp is provided for the convenience of seminar participants and does not represent a complete list of products used by George D. Lepp. ©2017 George D. Lepp.