HELICON FOCUS STAKING

Helicon Focus

- **Helicon Focus** - a software program that creates one completely focused image from several partially focused images by combining the focused areas in contiguous images.

- The program was originally designed for **macrophotography** and **optical microscope** image processing to cope with the shallow depth-of-field problems in the latter.

Helicon Focus cont'd

- In one way, this piece of software solves the problem of shallow depth-of-field; but is it a "magic potent" for all scenes?

- It is exceptionally good for macrophotography.

- It is also good for landscape photography if used with care during shooting. [More on this later].

- Great quality of images predominantly due to advanced interpolation techniques, 16 bit workflow and direct RAW file input.

Helicon Focus cont'd

- Reads and writes 8bit and 16bit tiffs, jpegs, etc.

- Performance is very fast even with batch processing.

- Compatible with latest i7 processors.

- Good selection of tools including a retouching brush to clone from aligned source images to repaint artefacts in the final image.

Helicon Focus cont'd

- Two versions available – 'Lite' (basic) and 'Pro' (advanced). Differences in the two versions are available on Helicon Focus website.

- A range of well-engineered accessories from Cognisys Inc. for focus stacking when shooting; see www.cognisys-inc.com

- Latest version has 'Helicon Remote' for automated focus bracketing.

Helicon Focus cont'd

- An unlimited number of images can be processed; resolution of over 100 MPxs, 64 bit support & both PC & Mac versions available.

- The software also aligns images very accurately as objects often change their size and position from shot to shot. This function is especially important for macrophotography.
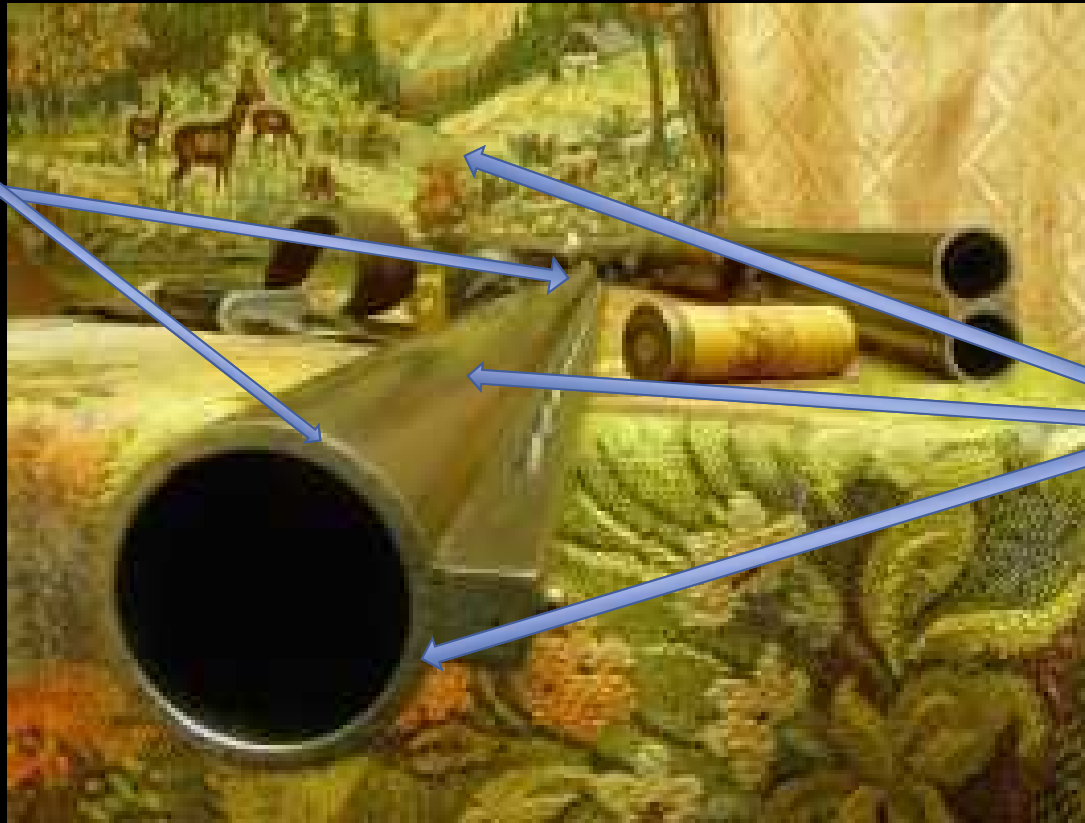
Helicon Focus Samples

First Focus Point

Last Focus Point

First plane

Last plane

Combined image

Optical microscope, 100x magnification. 15 images

Digital camera, DOF: 2cm-3m, 24 images

Result from Trial Program

Note the superimposed Helicon Focus identification wording on final image in trial version if used after 30-day free period.

Created by simply moving the focusing ring on the tripod-mounted camera, from front to back.

H-F Orchid 2

H-F Orchid 3

H-F Shooting

- A sturdy tripod and a remote control switch are absolute requirements.

- If using a lens with Image Stabilisation (or VR), switch IS/VR function <u>off</u>.

- Ensure subject is not going to move, e.g. wind, vibration, accidental touching.

- For flowers, still life, and small subjects use a macro lens, if you own one.

H-F Shooting cont'd

- There are varying views on 'best' aperture for shooting. Some say 'wide-open', others say use the 'sweet spot' in the lens (usually thought to be around f/8 or f/11)

- Unless I am working in low light conditions, I use two stops smaller than wide open. My only rationale for this is to slightly increase the depth of field in each shot (more in focus) and give the software a 'helping hand'. I don't think HF needs this, but I take that precaution.

H-F Shooting cont'd

- I shoot in AV mode and select an ISO to suit the light conditions. For the next few slides let's assume you are photographing the single orchid in Slide #9.

- Take a shot, using auto-focusing, of the part of the orchid <u>closest</u> to the camera and examine the histogram, to ensure 'all is ok'.

- Take a second shot, using auto-focusing, of the part of the orchid <u>furthest</u> from the camera and again examine the histogram, to ensure there is not a significant variation in light conditions between front and rear.

H-F Shooting cont'd

- Decide on the easiest sequence for shooting – closest to furthest, or vice versa. Both work fine. [I generally commence shooting from the point nearest the camera and work backwards].

- Having satisfied yourself that the camera settings you have chosen are OK (based on the histogram results), use autofocus to compose the first shot.

- Then, change to manual focus and using the remote control switch, take the first shot, noting generally 'the spot' on to which you will focus for the second shot. There is no fixed rule for selecting that second 'spot', or for subsequent 'spots', as you continue to photograph deeper into the flower.

H-F Shooting cont'd

- Move the focusing ring on the lens <u>a very small</u> amount (anticlockwise if you are shooting from nearest to furthest) and check the viewfinder for sharpness of focus (it should be fine). Take the second shot.

- Continue with this method of adjusting the focusing ring on the lens, and shooting until you are focusing on the furthest or deepest part of the flower. Take an extra shot or two at the end to ensure you have captured everything from front to back.

H-F Shooting cont'd

- Start with taking five or six shots for a single flower. Take more shots if you wish to photograph a number of buds in a row, like the orchids shown in Slides #9 and #10.

- There is no fixed rule for the number of shots required; experiment and review the results after you run the shots trough Helicon Focus.

- The theory is that the depth of field in the second shot must contain focus or control points that were also captured in the first shot, and this process is repeated with each successive shot.

H-F Shooting cont'd

- The HF software used these common focus or control points to align the images into the final combined image.

- Until you are used to shooting for HF take more rather than less images. You will soon get a feel for what works best for you and your equipment.

- If you have live view on your camera, use this to assist with focusing. [A camera with a moveable/rotating LCD is a big help when working outdoors on small flowers, usually found in low and awkward positions].

H-F Shooting of Landscapes

- The shooting technique just covered, i.e. rotating the lens focusing ring in small increments, works equally for shooting landscapes.

- As the light conditions in the foreground and background of a landscape composition are likely to change more than you experienced when photographing the orchid, checking of the histogram becomes even more important.

H-F Shooting for Landscapes cont'd

Closest of 13 focus points

Furthest of 13 focus points

Stacked Final Image

[Images taken by John Costello on Nikon D300, 80-200mm lens, f/2.8, ISO 200, 1/1000th sec]

Helicon Focus

THE END

Shooting Star Trails

➢ Tripod.

➢ Set camera to ISO 200

➢ Wide angle lens set to f/5.6

➢ Camera set to manual mode on Bulb

➢ Cable release in camera.

Shooting Star Trails cont'd

➢ Set lens focus to infinity and switch lens to manual focus.

➢ Switch IS/VR off on lens.

➢ Compose image

➢ Take image using cable release, ensuring you lock the switch into the dedicated slot on the switch. This keeps the shutter open as long as the cable release is locked as mentioned.

Shooting Star Trails cont'd

- Use a strong flash light to "paint with light" any part of the foreground, e.g. tree, rock.

- Point camera towards south in southern hemisphere; point north in northern hemisphere

- Anytime from 20 minutes will give you nice circular lines in the sky – the star trails.