

ASTROPHOTOGRAPHY CHEAT SHEET

10 steps to using your camera in the dark

The following is a handy reference guide to complement the Kielder Observatory Astrophotography events. Familiarise yourselves with these 10 steps to assist you in operating your camera in darkness and taking photographs of the night sky.



TIP 1
INFINITY FOCUS

Focussing a camera lens in the dark can be difficult. Learn where infinity focus lies on your camera lens before heading out and remember to turn off autofocus.

TIP 2
ISO

Recommended setting 1600. Increasing ISO sensitivity allows your camera to collect light faster. But beware, pushing it too high may add unwanted 'noise' to your image.

TIP 3
APERTURE

Recommended setting f/4 or lower. This determines the size of the hole that light passes through on your lens. The lower the number, the bigger the hole and the more light that will reach your camera sensor.

TIP 4
SHUTTER SPEED

Recommended setting 20 seconds (20".) Under low light conditions your camera will need to expose for a longer period of time. So long in fact that keeping it still will be an issue (See Tip 6).

TIP 5
THE '600' RULE

$600 / f = T$

A guide to calculating the maximum exposure time you can use before star trails begin to appear in your photograph. Divide 600 by the focal length of your lens. ie: $600 / 18 = 33$ seconds.

*Tips 2-4 are a single subset called the Exposure Triangle

TIP 6
REDUCE MOVEMENT

Any photograph exposed for longer than 1/60th second requires camera stabilisation. A tripod is essential. An intervalometer can be useful for timelapses. A camera setting called 'mirror lockup' will reduce shutter shake.

TIP 7
WHITE BALANCE

Recommended setting 3400k. Although not technically correct, a cooler white balance will result in a more visually pleasing blue sky. Set your camera to shoot in RAW and you can adjust white balance later without any loss in image quality.

TIP 8
KEEP YOUR LENS WARM

If the temperature of your lens' glass drops below the ambient temperature, unwanted dew will form on the surface. Manage this with dedicated lens warmers or keep a spare in a warm place.

TIP 9
DARK SKIES

Finding a location you can familiarise yourself with is easier than navigating an unknown field in the dark. To find your closest dark sky location use an online resource like DarkSkyDiscovery.org.uk

TIP 10
LEARN HOW TO FIND NORTH

Whether you're interested in capturing the Aurora Borealis or recording star trails, finding the North Star Polaris in the night sky is essential for navigating the stars.

Please note that the above tips and settings are meant as a guide only on preparing your camera for night time photography. Different locations, environments and equipment will require altering camera settings to suit.

Software Packages: • **ADOBE LIGHTROOM & PHOTOSHOP** Essential for any line of photography practise • **GIMP** Powerful, free software for image editing.

• **STARSTAX** Stack images to create one single frame of star trails. • **LRTIMELAPSE** Powerful time lapse creation tool that works with Adobe Lightroom.