

Mike Kukucska – Astro Photography <http://www.mkimage.ca/>

Mike specializes in Wide Field Astro Photography, meaning he uses a wide angle lens and traditionally gets the Galactic core in his photo's rather than using a telescope or focusing on planets.

The Galactic Core is what we generally term the "milky way". When taking photo's you need to face south in order to get the Galactic core in your images. There are a few key things to take into account for this type of photography:

- Usually best shooting time is between 3am and 4am with several hours of lee way on either side depending on the time of year
- Light pollution is a key consideration, the GTA is bad unless you are down around the lake (Dunville area) or very far north
- Even a ¼ moon is too bright, plan to shoot around the "new moon" phase of the month
- Summer is the best months with the longest span of the Galactic Core
- Use an app such as Photopills (www.photopills.com) which tracks the sun and core and can show the best shooting times
- Also check the clear sky chart for cloud coverage at <http://cleardarksky.com/csk/> shows a 48 hour prediction of cloud and clear sky coverage updated every 24hours.

When planning a shoot, use google Earth to find locations, be sure to pan up and down on the site to show overhead lights that are not lit in a daytime viewing. Also watch for street signs or houses in the area. A daylight site survey is also key as things look different at night when you will arrive and it's good to know if the ditches are deep, filled with water or there are no trespassing signs.

You can use light pollution and the moon to your advantage. Light pollution can seem like a glowing ball on the horizon that the Galactic core streams from, Also use flashlights for a beam of light to the core. If the moon is out put it behind you and remember that your scene will be lit almost like daylight in the long exposure because of the moon. This can make ground features in the image stand out nicely.

Be sure to try all times to shoot, the blue hour can be spectacular in an image rather than the standard absolute black. However you may not get the Galactic Core in the shot if it is still below the horizon at that time of day.

For tutorials and more head to www.lonelyspeck.com also has gear reviews and exposure calculators. There are also Lightroom presets for development of the fantastic images you take.

Lenses:

You need a 14-20 mm wide angle lens, preferably f/2.8 or larger. This allows the largest field of view and the most light to enter the camera. Also it makes the timing of the image short enough to not have star streaking occurring. You want to keep the shutter open as long as possible and to figure this out use the 500 rule.

500 rule – 500 divided by the focal length of the lens = how long your shutter should be open ie- 500/ 20mm = 25 second exposure. Try and keep this number under 30 seconds.

These lenses can be very expensive so some of the best cheap lenses are made by Rokinon and are fully manual lenses which is the best for this type of photography.

Shooting Tips:

- Exposure – expose to the right of the histogram rather than doing work in editing software. Using a program always introduces noise that can't be fixed, if it is in camera you can reduce the noise in the program afterwards
- Focus - Use Liveview. Pick the brightest object in your field of view and zoom in on it on the back viewer then make this object as pinpoint sharp as you can. Focus on the camera should be on full manual. NO AUTO FOCUS ! Using infinity is no accurate on lenses. If you will be using the lens for this you can make a mark on your lens once you get a good sharp shot so you can skip this step down the road.
- Remember that temperature changes how your lens works, especially focus point
- Starter Settings: Manual mode- 25 sec exposure (depending on your lens, see 500 rule above), ISO 3200 or more, F2.8 or larger, RAW (no JPG as it compresses). Auto White Balance, turn OFF long exposure noise reduction, use a timer or a cable release to prevent vibration and most important TURN OFF IMAGE STABILIZATION on the lens. Take these as a starting point and play with ISO and length of shot ONLY.
- Always have lens wipes with you as the dew is often setting while you are waiting for your shot.
- Have something in the ground view of the image, trees, rocks etc
- Get a good heavy tripod !

ISO – It is better to have a high ISO and exposure in camera and dial it down in a program such as lightroom rather than have to try and go up in a program and add noise to your image.

Adding Light :

You can add light to your shots to highlight an ground object or create depth and mood in the image. BUT because this will be a long exposure you need very little actual light. A flashlight can be used but is often too strong, look for dollar store flicker candles, best is a light that is rechargeable and dims. Use toilet paper, coloured tissue paper or gels to add colours and dim lights and set the lights to highlight the front or edges of ground objects such as barns, rocks or trees. Car headlights can also be used but flicking them on and immediately off will likely be even too much light. (1 second)

Flashlights can be used to create a “beam” of light upwards, person holding the light can't move for the whole exposure and will be a silhouette in your image.

Be sure to put a light on a lanyard for you to check settings and see around you that will not be lost rather than putting things in pockets that can fall out.

Have some fun !

Make your shot with toys or inukshuks on an elevated tray using local rocks and tree branches. This will require multiple shots to focus on the objects in the foreground and then the Galactic Core in the background. Toy stores or model stores are great for ideas and use bubble gum to stick your item down so the wind doesn't blow it off. Also using LED tape lights on items such as a paddle and have someone “paddle” through the shot or spin like in spinning steel wool.