**Astrophotography Basics**

Let me start by asking; why do you want to connect a camera to a scope?

* To take pictures of celestial objects to show other people?
* To see colours in celestial objects you can’t with the human eye?
* To see celestial objects you just can’t with the human eye?

Whatever your reason may be, if you do start astrophotography you are starting your journey on a challenging but very rewarding hobby.

I hope today to set you off in the right direction for the basics so you can make some informed decisions about equipment and what is required to get started.

**A simple Camera and Fixed Tripod**

Let’s start with the basics: A simple camera and Tripod, believe it or not you can achieve a lot with just a sturdy tripod and a DSLR camera. On the hand out there are two photos (not mine) taken with cameras on a fixed tripod.

**Piggy Back Imaging**

If you have a scope already and want to start imaging then consider a piggy back arrangement, this allows you to use your standard DSLR camera but also take exposures much longer than 30 seconds to really start to get details into you images. This set up still uses the camera lens so will be limited to the focal length you can use.

**Afocal Coupling**

An afocal coupling allows the connection of a camera and lens to an eye piece to take an image, these types of connections are difficult as they require very rigid connectors and rely on the camera lens and eyepiece to bring the image to focus properly.

**Eyepiece Projection**

Eyepiece projection is very similar to A-focal Couplings except you do not use the camera lens for the connection but a T Ring and Adaptor that holds an eyepiece in the image train. Again these can be difficult as you need to understand the light path to ensure you get a flat (or at least usable flat field) that comes to focus on the camera chip.

**Prime Focus**

Prime focus is the most commonly used method for attaching a camera to a telescope as it is the most rigid and easiest to bring the camera chip to focus.

All that is required is a DSLR Camera, T Ring and T Adaptor to make a connection to the back of your scope.

The only other equipment you usually need to consider in a Prime Focus set up is a field flattener, Focal Reducer, a Multi-Purpose Coma Corrector or a Barlow lens.

**Additional Notes**

* Start by imaging at shorter focal lengths and progress your way to longer focal lengths (start with the camera lens or a short refractor).
* When you’re ready invest in a good mount, this is key to getting good images, the better the mount the longer your exposures can be.
* Autoguiding will become important when you progress into Astro photography.
* Always make sure your connections are rigid and secure.
* DSLR’s use a T Adaptor (speak to Peter) to enable them to connect to a telescope.
* Ask lots of questions and share your experience with others.
* Understand the difference between Alt-Az and Equatorial mounts and the limitations of Alt-Az mounts for long exposure imaging.