AN INTRODUCTION to AMATEUR ASTROPHOTOGRAPHY – Part 1

by Pete Scully

This is an introduction is to a series covering: selection and use of **Hardware** and **Software**.

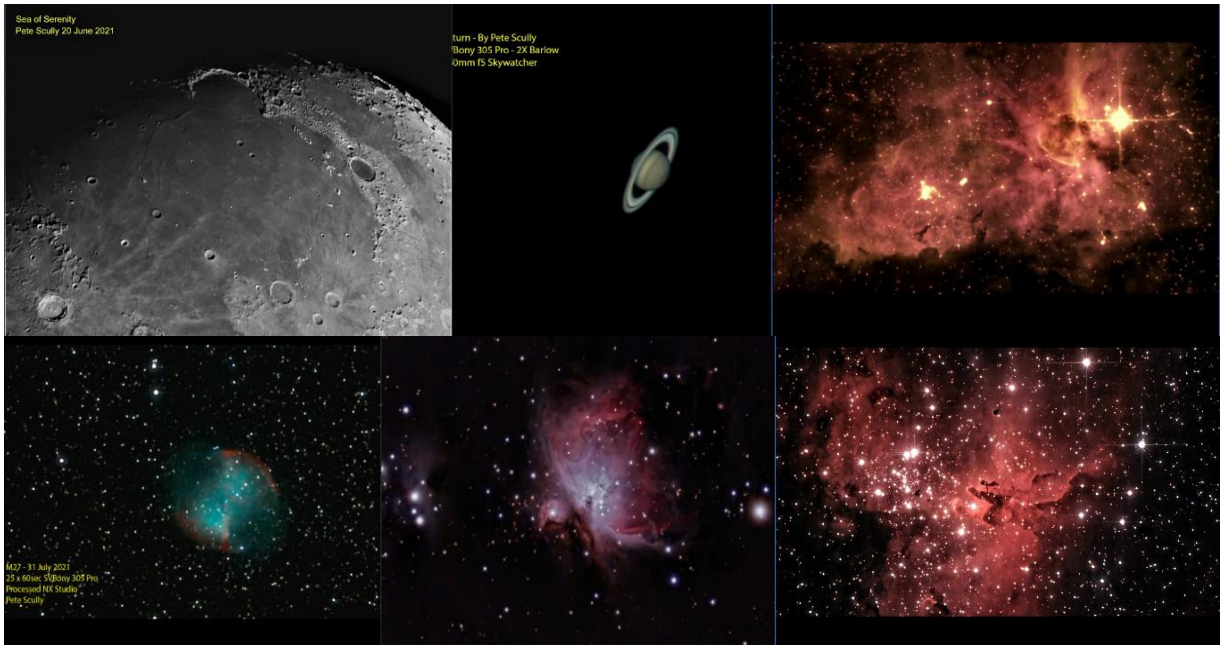
Introduction

What is Astrophotography? It is the capturing of images of the Moon, Planets, Galaxies, Nebulae.

As a hobby it has many challenges. It is not cheap once you get more involved. A decent scope and full GOTO mount and cameras can cost as much as R40 000. The images below were taken with modest equipment. Such images of objects, some of them thousands of light years away, make Astrophotography so interesting and inspiring.

Caution is the prime word; one should not step in to the hobby blindly. Learn to crawl then walk then run. It takes patience and perseverance. But the efforts are extremely rewarding.

Many enthusiasts quickly lose interest because of ill informed advice. They buy equipment which is "Cheap" and end up with disappointing results. Do research and read internet reviews.



Now Let's Learn to Crawl

The crawling stage is a relatively simple step. Using a DSLR camera and imaging the Milky way and brighter nebulae, even the larger planets, can be rewarding.

Equipment / Software required

1. DSLR Camera
2. Tripod
3. A trigger cable for the DSLR.
4. A fast 50mm lens – (50mm 1:1.8). This is a fast lens and gives a wide field of view.

All of the below software are good. It's just a matter of personal preference.

1. **PhotoShop**. Not really necessary but a very good starting point. *NOT FREE!*
2. **NX Studio**. Compares to Adobe Lightroom. FREE
3. **GIMP**. A very good free image enhancing software. FREE
4. **DeepSkyStacker**. For stacking many light frames. FREE
5. **Siril**. For stacking and some very good enhancement features. FREE
6. **ASTAP**. For stacking, basic enhancing, plate solving. FREE

Because we are not using any form of tracking/guiding we are restricted to short exposure times to prevent star trailing. A GENERAL rule is : 500/lens focal length, for example 500/50 = 10 seconds.

I find this exposure time does show evidence of star trailing when zooming in. I PREFER TO USE 400/focal length = 8 seconds. Of course dark moonless nights are essential

End of Part 1.

The next issue will deal with the practice of Milky Way photography using a tripod, stock DSLR, software to control the camera and capture images.

As we progress, topics will include selection and uses of hardware and of software.