Night Photography & Astrophotography

September 2020

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Photo by Biel Morro on Unsplash

Session Overview

- Equipment
- Planning
- Tips for different types of night photographs
- Introduction to astrophotography
- Imaging / data collection tips
- Useful post processing software
- Useful resources
- Questions / Comments

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Equipment – the basics

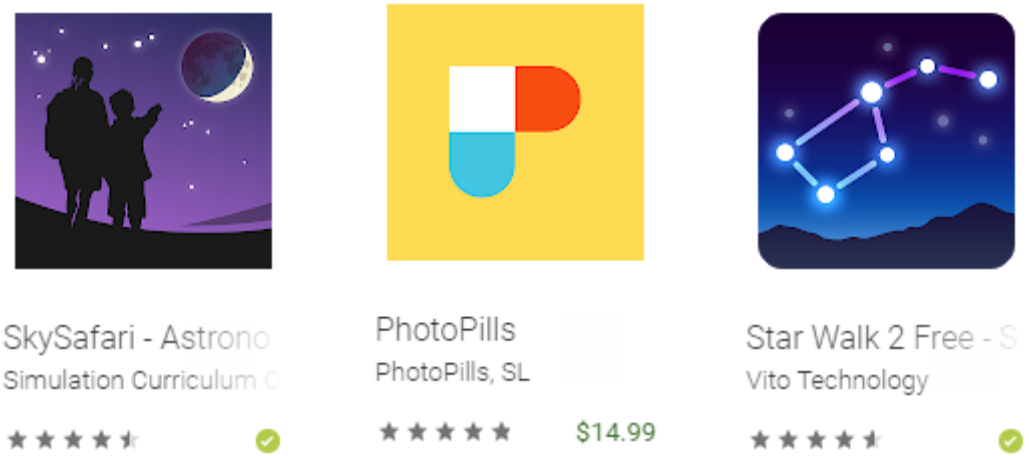
- Camera body - manual/BULB settings
- Lenses(ideally wide and fast)
- SD Card (DSLR)
- Charged battery / extra batteries
- Tripod
- Head torch/lighting equipment

Equipment – cont…

- Intervalometer / remote shutter release cable
- Warm clothes
- Keep the dew away
- Small mount / autoguider
- Telescopes, guidescopes, etc.
- Post shoot equipment

Planning, planning and more planning… did I say planning?

- Why??
- Useful astronomy applications
- Note the moon phase, weather
- Scope out location
- Safety



Tips for camera settings

- Switch off IS when using tripod/long exposures
- Mirror lock up
- Manual vs Autofocus
- Shoot manual/bulb
- Using an intervalometer - check instruction manual for settings!
- Shoot RAW
- In camera noise reduction on/off?
- Diffraction spikes – aperture
- Live view brightness settings

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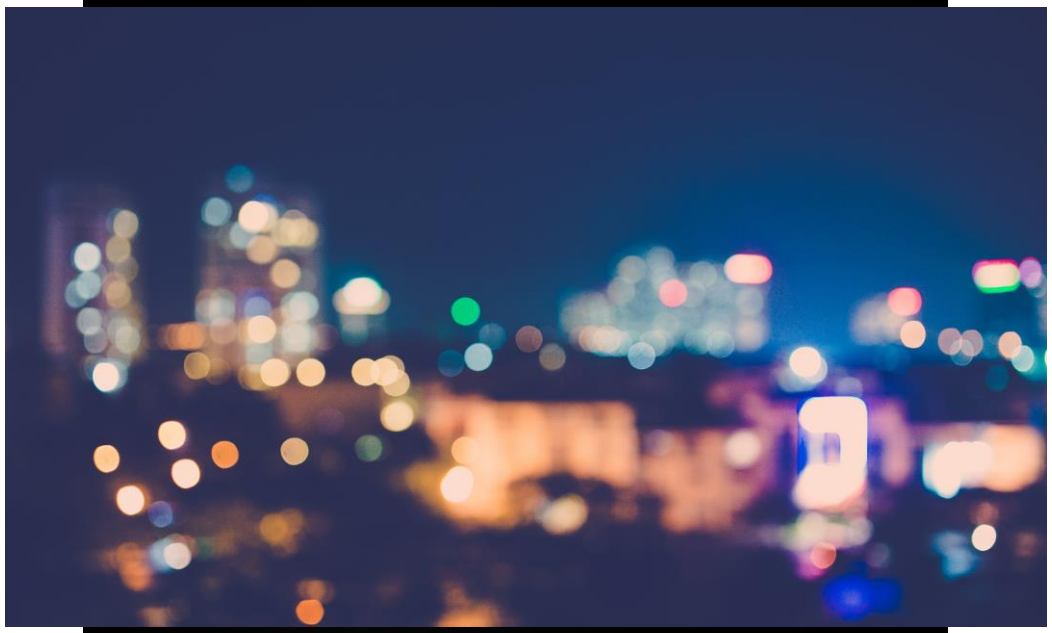

Photo by Thong Vo on Unsplash

Photo by Benjamin Blättler on Unsplash

Night photography… a broad topic

- Remember you are working with low light - tripod and fast lens
- Use slow shutter speeds to create interesting effects
- Be careful not to overexpose highlights
- Take a test shot using high ISO and faster shutter speed for time efficiency
- Be creative with focus
- Have some fun with light painting
- Check exposure levels on the histogram
- Use bracketed exposures

Moon Photography

- Your focal length will dictate the type of moon image
- Optimal light for single exposure – golden/blue hour
- Too dark…. combine two exposures or try silhouette moon photography
- Camera settings will vary widely depending on the type of photograph.

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Moon Photography – Camera Settings

Focal length	Aperture	Shutter Speed	ISO	White Balance
10mm to 400mm and beyond	f2.8 – f11	1/200 – 3 sec Note: use faster shutter speeds for longer focal lengths to avoid trailing of moon	Adjust according to aperture and shutter speed. Try and keep as low as possible to avoid noise	3,400K – 7,500K

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Milky Way Photography

- Fast wide angle lens (<35mm ideal, f 2.8 or less)
- Where and when is the best time?
- Point of interest
- Think about the moon phase
- Lighting the foreground – artificial, moon, star light
- Panorama, star trails
- Long exposure noise reduction

Photo by Patrick McManaman on Unsplash

Milky Way - settings at a quick glance

- Wide angle focal length
- Aperture: set as wide open as possible
- Shutter speed: 25- 30 seconds
- ISO: 1600 – 6400
- White Balance: 3,500K – 4,800K

Note: Longer shutter speeds and/or longer focal lengths may be used if you are using tracking/autoguider

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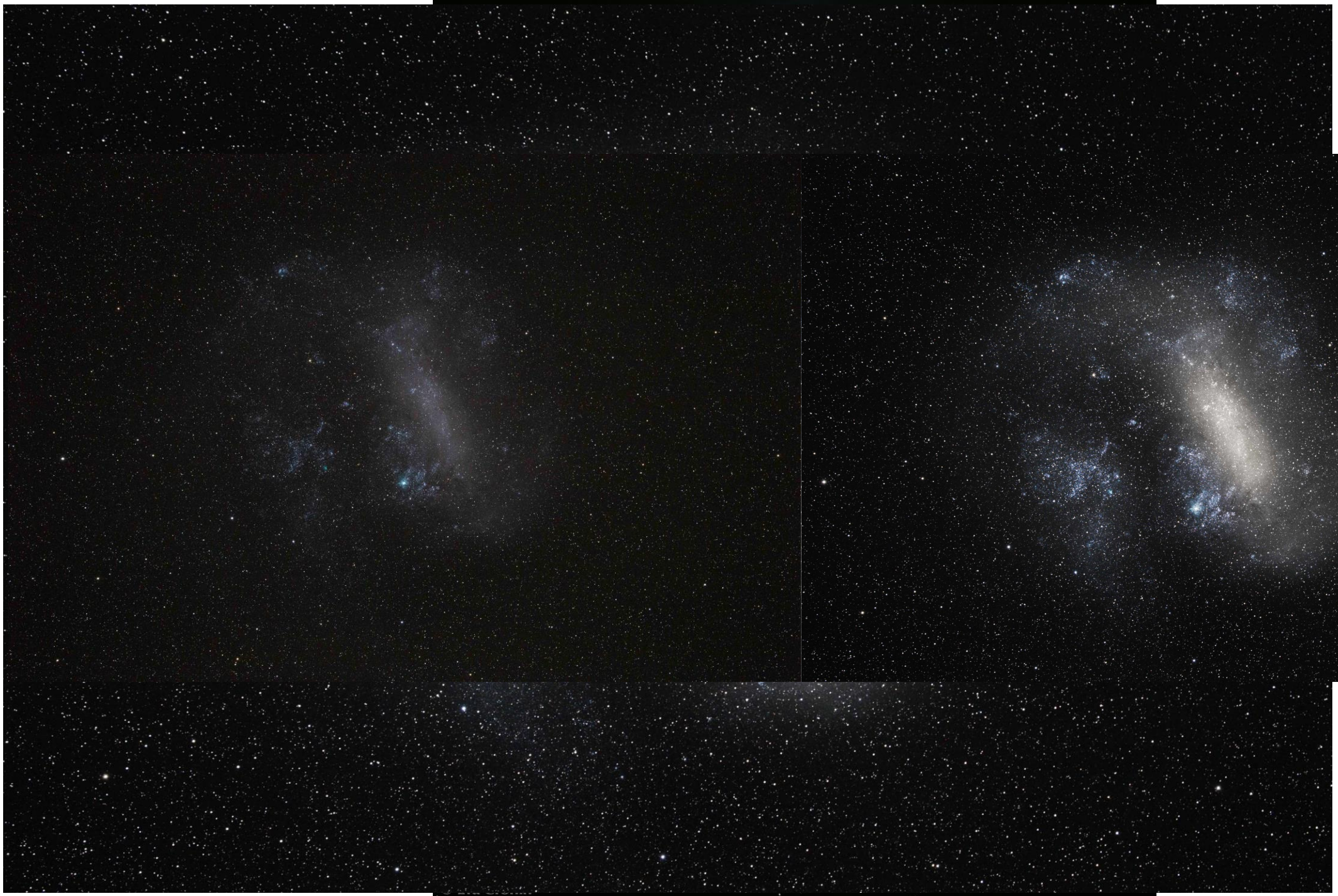

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Imaging / Data Collection Tips

- Shoot RAW
- Remember, don’t be fooled by live view brightness
- Try auto-bracketed exposures
- Image composites
- Stack multiple frames (light frames) to reduce noise
- Stack dark frames, flat frames and bias frames for better results

Useful Post Processing Software

- Lightroom
- Photoshop
- GIMP
- Specialised astrophotography software for stacking and processing images:
  - Deep Sky Stacker
  - Sequator
  - Registax
  - Pixinsight

Useful Resources

- photopills.com.au
- improvephotography.com
- canva.com
- digital-photography-school.com
- unsplash.com
- philhart.com

Questions / Comments

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