



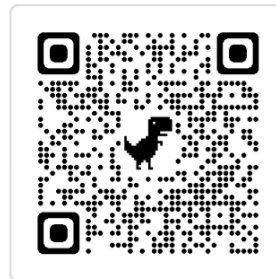
Imaging the Planets

Getting Started and Tips & Tricks

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SPAC website



SPAC Facebook page:

Where to start?

- Your scope must be able to track; take your time to align properly
- Choose your camera carefully. Read the forums (cloudynights.com is the best). Most common is ZWO 224 (mono vs. color) and 290.
 - Pricing, \$100-\$300 for a good camera
- Have a laptop that uses USB 3.0; transfer rate
- IR and color filters

Equipment and Software (for download at QR)

- Laptop/camera/telescope for equipment; software is free:
 - **Firecapture** to record (or SharpCap)
 - Software: <http://www.firecapture.de/>
 - Instructional videos on Youtube: <https://www.youtube.com/channel/UCJK05dyfpFRpUDfJOraYkEg>
 - **Autostakkert** to sort and stack the images (seconds of seeing)
 - Software: <https://www.autostakkert.com/>
 - Instructional videos on Youtube: https://www.youtube.com/watch?v=Ci_aMmO4DBA&t=1057s
 - **Registax** to bring out the detail in the image once stacked.
 - Software: <https://www.astronomie.be/registax/>
 - Look at wweb's Youtube channel for Registax tutorials.



- Use Photoshop, GIMP, or some other photo editing software to reduce noise, adjust contrast and brightness, crop, and label. I use Paint.net
- Other software for purchase are helpful, such as Astra Image (\$42)

Other Helpful Links

- Moon
 - New Atlas of the Moon by Legault and Brunier (\$35.95 on Amazon)
 - Locations of the Apollo landing sites:
 - <https://www.skyandtelescope.com/observing/how-to-see-all-six-apollo-moon-landing-sites/?fbclid=IwAR067TihAPsXbXV9rrkVQqncJ6X0Rzq2BshBxufOlwSewymA4Vm93eKPtww>
 - Look at the July 2019 SPAC Examiner for the Apollo sites
- Jupiter
 - Knowing when the GRS transits:
 - <https://www.skyandtelescope.com/observing/interactive-sky-watching-tools/transit-times-of-jupiters-great-red-spot/>
 - “Moons of Jupiter” and “Jovemoons” apps
 - Know the opposition of Jupiter and Saturn (see January newsletter) and can be found here by making custom graphs: <https://in-the-sky.org/graphs.php>
- Saturn
 - See above for knowing the opposition
 - For Jupiter and Saturn, know maximum exposure times
 - Winjupos to de-rotate: <http://iupos.org/gh/download.htm>
- Mars
 - Use Winjupos to plan what will be visible (see below). Follow the opposition closely for extreme angular size changes.



- Venus
 - Filters needed, very bright when gibbous.
- Uranus and Neptune
 - Small (Neptune is the apparent size of Ganymede) with Uranus twice that.
 - Your frame rate will be slow because it is so small.
- OTHER
 - Use **Winjupos** for advanced stacking and planning sessions (in download QR link)