These lists of APPs and Software have been compiled to help those new to Astronomy and should assist Astronomical enthusiasts to get started and for reference as a reminder of what is available.

**Apps on Google Play Store for use on Android Smart Phones and Tablets**

| **APP Name for Android** | **Free or Buy** | **Comments – Observations of ease or difficulty of use** |
| --- | --- | --- |
| 3D Solar System | Free | Data on the Solar system objects |
| APT Darkness Clock | Free | A sub-set of the clock and calculator in the Astro Photography Tool |
| Aurora | Free | A tool to view Aurora remotely |
| Clear Outside | Free | Tool to indicate seeing possibility times, cloud cover etc. |
| Cloud-a-Day | Free | An excellent tool for identifying cloud types |
| CloudGuide | Free | A tool for identifying cloud types |
| Cloud Spotting | Free | A tool for identifying cloud types (everyday and rare) and how they form plus a gallery |
| DeepSkyCamera Beta | Free | An imaging camera using the Mobile imaging system, can take in Raw and multiple images |
| Go Stargazing | Free | Gives details of local Astronomical Societies (including CMHASD) with dates of meetings and links to the society web sites |
| ISS Detector | Free | An alert tool for ISS overpass at given location |
| ISS Live Now | Free | A streamed image from the ISS |
| LPM | Free | Tool to give Bortle **Light Pollution Map** with various useful tools (e.g. Sun rise/set, Moon rise/set) |
| Moon | Free | Gives Data on Moon and its phases (select dates to see changes) with Sun rise/set, Moon rise/set |
| NASA | Free | A tool to display a variety of images from NASA collections |
| Nightshift | Free | Tool to indicate seeing possibility with Satellite sky image |
| Planet Scope | Free | Solar System Orrery |
| Planet’s Position | Free | Tool to identify Planet position from a given location |
| Polar Clock | Free | A Polar Alignment Tool |
| PolarisView | Free | A Polar Alignment Tool, can view Polaris position as if viewing through a finder scope or not |
| SkySafari | Free | A sky map tool, can use to drive telescopes |
| SkySafari 6 Pro | Buy | An enhanced sky map over free version, can use to drive telescopes – especially the Observatory |
| Sky Map | Free | A sky map tool displaying celestial objects |
| SkEye | Free | A sky map tool displaying celestial objects |
| SkyPortal | Free | For use with Celestron SkyPortal WiFi kit mounted on a telescope |
| SkyView Free | Free | A sky map tool displaying celestial objects |
| SkyWiki | Free | A sky map tool with various useful tools (e.g. Sun rise/set, Moon rise/set) |
| Solar Polar Alignment | Free | A Polar Alignment Tool for rough alignment based on Sun/s position |
| SolarWalk2 | Free | Solar System Orrery |
| Spirit Level | Free | An excellent spirit and bubble level to use to level tripods etc. |
| Stargate PA | Free | A Polar Alignment Tool |
| StarSense Explorer | Free, buy enhanced features | Guide for use with Celestron StarSense kit mounted on a telescope |
| Star Chart | Free, options to buy | A sky map tool displaying celestial objects with good feature to explore various objects with many upgrades to purchase. |
| Stellarium | Free, options to buy | A sky map tool displaying celestial objects |
| Sun, moon and planets | Free | Data on the Solar system objects |
| Sunclock | Free | Tool to show hours of Dark and Daylight with other tools menu |
| What Is That Cloud | Free | A tool for identifying cloud types. You can take photos of the sky and the tool will give probability of the cloud type |
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**Apps on Apple App Store for use on IOS Smart Phones and iPads**

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| **APP Name IOS** | **Free or Buy** | **Comments – Observations of ease or difficulty of use** |
| ISS Detector | Free | An alert tool for ISS overpass at given location |
| Sat Seeker ISS Tracker | Free |  |
| SkySafari 6 for IOS | Free | An enhanced sky map over free version, can use to drive telescopes – especially the Observatory (TBC) |
| SkyView | Free | A sky map tool displaying celestial objects |
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**Astronomical Software to run on Windows PCs**

| **Software Name for PC** | **Free or Buy** | **Comments – Observations of ease or difficulty of use** |
| --- | --- | --- |
| Affinity Photo | Buy | Affinity Photo is a raster graphics editor developed by Serif Ltd. for iOS, macOS, and Windows |
| AlsCollimationAid | Free | A useful tool to aid collimation of Reflecting telescopes |
| Altair Capture |  | An Image Capturing tool |
| Astro Photography Tool | Free | APT stands for "AstroPhotography Tool" and it is like Swiss army knife for your astro imaging sessions. No matter what you are imaging with - Canon EOS, Nikon, CCD or CMOS astro camera, APT has the right tool for planning, collimating, aligning, focusing, framing, controlling/tethering, imaging, synchronizing, scheduling, meridian flipping, analyzing and monitoring. All its features are packed in an easy and comfortable to use interface with design that had no alternative back in 2009 when it was released. |
| AstroPlanner | Buy | AstroPlanner is a software application for Macintosh and Windows computers that facilitates astronomical observation planning, visualisation and logging, as well as control of telescopes with computerised go-to mounts or digital setting circle controllers. |
| ASCOM | Free | A tool to enable multiple imaging devices to interwork. Also can use to determine Field of View of a given telescope focal length |
| ASI Camera Drivers & Software | Free | Specialist for ASI cameras |
| Astro Pixel Processor | Buy or subscribe | An excellent image processing tool to stack image files |
| AutoStakkert |  | An image processing tool to stack image files |
| C2A Computer Aided Astronomy | Free | A tool to drive a telescope |
| CartesDuCiel | Free | A comprehensive Sky Chart tool which can drive a telescope |
| Celestron CFM and Java | Free | Celestron Firmware Manager to update the Celestron StarSense hand controller and plate solver guide system |
| Celestron StarSense | Free | A driver set for a modified hand controller for Goto mounts and plate solver guide system |
| Collimation & Focus Tools | Free | A useful tool to aid collimation of Reflecting telescopes |
| CyberSky | Free | An older sky map tool |
| Darktable | Free | An RAW image processing tool |
| DeepSkyStacker | Free | An image stacking tool to process RAW files |
| FireCapture | Free | An image capturing tool to work with a variety of cameras |
| Gimp | Free | An image processing tool to stack image files |
| GradientXterminator | Buy | An add in for Photoshop for image processing |
| Hasta La Vista Green | Free | An add in for Photoshop for image processing |
| NINA | Free | N.I.N.A. offers a broad variety of capabilities. The toolset spans from choosing, framing, focusing, centering and imaging one or multiple targets and much more. OK for beginners and advanced users |
| PHD Guiding 2 | Free | PHD2 is telescope guiding software that simplifies the process of tracking a guide star, letting you concentrate on other aspects of deep-sky imaging or spectroscopy |
| PIPP | Free | PIPP is a Windows application designed for pre-processing planetary images before stacking them with image stacking software such as Registax. PIPP's main purpose is to crop each image frame and select only the best quality frames to reduce the memory and processing requirements of the stacking software. |
| Registax6 | Free | A Image stacking software for DSLR-RAW image formats: CRW, CR2, NEF, DNG, MRW. on the filename in the dialog. When a file is chosen a preview can be seen in the dialog. Double-clicking the filename will load the file into RegiStax and process it also. |
| Sequator | Free | Sequator is a free software which can track stars on multiple images, align stars and stack them. |
| SharpCap | Free but buy licence for advanced features | SharpCap is an easy-to-use and powerful astronomy camera capture tool. It can be used with dedicated astronomy cameras, webcams and USB frame grabbers. |
| Siril | Free | SIRIL is an astronomical image processing tool |
| SolarSystemScope | Free | A Solar system Orrery |
| StarNet | Free | StarNet++ is a simple program that allows you to remove the stars from your astrophotography images. This technique is used by many amateur astrophotographers to help reveal the delicate structures of their deep-sky object. |
| StarTools | Buy | StarTools is a new type of image processing application for astrophotography that tracks signal and noise propagation as you process |
| Starry Night 8 | Buy | Professional Astronomy Telescope Control Software for Mac/PC. Version Starry Night SE 8.1.0.2045 was free with purchase of a Celestron telescope. |
| Startrails | Free | A tool to create startrail-images and timelapse movies |
| Stellarium | Free | Stellarium is a free open source planetarium for your computer. It shows a realistic sky in 3D, just like what you see with the naked eye, binoculars or a telescope. |
| WinJupos | Free | Use WinJupos to derotate your planetary images. Sharpen up your planetary astrophotos with software to stop worlds spinning |
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**Astronomical Software to run on Apple Macs**

| **Software Name for Mac** | **Free or Buy** | **Comments – Observations of ease or difficulty of use** |
| --- | --- | --- |
| Affinity Photo | Buy | Affinity Photo is a raster graphics editor developed by Serif Ltd. for iOS, macOS, and Windows |
| AstroPlanner | Buy | AstroPlanner is a software application for Macintosh and Windows computers that facilitates astronomical observation planning, visualisation and logging, as well as control of telescopes with computerised go-to mounts or digital setting circle controllers |
| PHD Guiding 2 | Free | PHD2 is telescope guiding software that simplifies the process of tracking a guide star, letting you concentrate on other aspects of deep-sky imaging or spectroscopy |
| SkySafari 6 for Mac OS X | Buy | A Professional Astronomy Telescope Control Software – three versions available |
| Starry Night 8 | Buy | Professional Astronomy Telescope Control Software for Mac/PC. Version Starry Night SE 8.1.0.2045 was free with purchase of a Celestron telescope |
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