

Telescope Checklists

For Astrophotography

- Software Setup (Once per Computer, assuming Fedora Linux)
 - ☐ Add user to dialout group: `sudo usermod -a -G dialout user`
 - ☐ Download QHY drivers: https://www.qhyccd.com/html/prepub/log_en.html#!log_en.md
 - ☐ Extract and install QHY Drivers:
`tar -zxvf sdk_linux64_20.08.26.tgz`
`cd sdk_linux64_20.08.26`
`chmod +x install.sh`
`sudo ./install.sh`
 - ☐ Enable INDI COPR:
`sudo dnf copr enable xsnrg/indi-3rdparty-bleeding`
 - ☐ Install indi-qhy `sudo dnf install indi-qhy`
 - ☐ Update Packages `sudo dnf update -y`
 - ☐ Connect Equipment
 - ☐ Guide Camera
 - ☐ Imaging Camera
 - ☐ Mount
 - ☐ Verify all items connected `lsusb`
 - ☐ Open Kstars
 - ☐ Set Home Location
 - ☐ Download Extra Data
 - ☐ Launch Ekos
 - ☐ New Profile
 - ☐ Unique Name
 - ☐ Select PHD2 Guiding
 - ☐ EQMOD Mount
 - ☐ QHY Camera
 - ☐ ASI2600mm pro camera
 - ☐ Aux Astrometry
 - ☐ 10" f/8 Truss Tube Ritchey-Chretien Astrograph 2000mm
 - ☐ 60mm Guidescope 240 mm
 - ☐ Start INDI
 - ☐ Set EQMOD Mount Baud Rate to 115200
 - ☐ Set Port to ttyUSB0 (`ls /dev | grep USB`)
 - ☐ Set Camera Pixel Info

- Columnation
 - ☐ Remove all Extension Rings
 - ☐ Attach Focuser to optical tube
 - ☐ Remove Dust covers
 - ☐ Point telescope at a light-colored surface, oriented horizontally.
 - ☐ Insert Cheshire eyepiece.
 - ☐ aim bright light into 45 degree surface.
 - ☐ Adjust Secondary Mirror to align central dot.
 - ☐ Adjust Primary to create uniform white ring around edge.
 - ☐ Release Small Lock Screw
 - ☐ Use Large Screw to collimate.
 - ☐ Tighten Lock Screw
- Physical Setup
 - ☐ Tripod
 - ☐ Mount
 - ☐ Roughly pointed North.
 - ☐ Leveled
 - ☐ Counterweights and endcap
 - ☐ Optical Tube on Dovetail
 - ☐ Powerbox
 - ☐ Connect power to Optical Tube Fan
 - ☐ Finderscope
 - ☐ Guide Scope
 - ☐ Guidescope Camera
 - ☐ Optical Train
 - ☐ Extender Rings (optional)
 - ☐ Filter Wheel (optional)
 - ☐ ZWO ASI Imaging Camera
 - ☐ Chairs
 - ☐ Computer
 - ☐ Cables
 - ☐ USB Cable from Guidescope Camera to Imaging Camera
 - ☐ USB Cable from Imaging Camera to Computer
 - ☐ USB Cable from Mount to Computer
 - ☐ Power to Mount

- ☐ Disconnect Power to Fans
 - ☐ Power to Imaging Camera
 - ☐ Balance
 - ☐ Balance Declination Axis (Slide tube on Dovetail)
 - ☐ Balance Right Ascension Axis (Slide Counterweights)
 - ☐ Aim Telescope toward Polaris
 - ☐ Engage Clutch (light)
- Rough Polar Alignment
 - ☐ Mount Power on.
 - ☐ Disengage clutches and turn 90 degrees in DEC.
 - ☐ Turn RA so that polar scope is oriented vertically.
 - ☐ Rough Polar Align through Polar Scope
 - ☐ Return RA and DEC to Home position (toward Polaris).
- Precise Polar Align
 - ☐ Launch Kstars
 - ☐ launch Ekos
 - ☐ Mount Tracking: RA
 - ☐ Launch PHD2
 - ☐ Loop - Adjust Focus of Guidescope
 - ☐ PHD2 Polar Drift Align
- First Plate Solve
 - ☐ Batinov Mask on
 - ☐ Test Exposure and Focus
 - ☐ Batinov mask off
 - ☐ Slew to Bright Star
 - ☐ Plate Solve
- Kstars order to target
- Second Plate Solve
- Frame
- Focus Check
- Test Exposure
- Full Sequence (cooled)
- Flats
- Darks
- Bias