

DAYSTAR FILTERS

REMOTE CONTROL CABLE FOR QUARK, GEMINI, AND SOL TELESCOPES

Please read this manual before using the product!

QUICK OVERVIEW:

Software & Driver Installation: Follow the link below to download and install the remote software package onto your Windows computer. This will install the USB communications driver, Quark Control software program, and ASCOM Alpaca driver. Click "Install this driver software anyway" when prompted.

<https://www.daystarfilters.com/downloads/#software>

Firmware: Your solar filter must have factory installed firmware v6.20 or later for Quark or Sol Telescopes, or v9.20 or later for Gemini. If your firmware version is older, you will be able to monitor the filter and put it to sleep, but no remote wing shifting will be possible. Older filters can be returned to the factory and upgraded for a small fee.

Choose a control method: For standalone manual remote use, DayStar's Quark Control application allows monitoring and control of filters. For integration with capture and scheduling software such as SharpCap, N.I.N.A., etc. an ASCOM Alpaca driver is provided that will make the solar filter appear as an 11 position filter wheel, with each position corresponding to a click on the manual wing shift knob. You cannot run Quark Control and the ASCOM driver concurrently, so choose your desired method and only run one at a time.

Cable usage: A standard USB port does not have sufficient power capability to run a Quark or Gemini solar filter, so this power injection cable must be used to source the power from an AC wall outlet, while the USB connection to your computer carries only data. If you are one of the lucky few to have a USB port on your computer that is labelled for 2 amps or greater current draw, then this remote control cable is optional but still recommended.

For assistance:

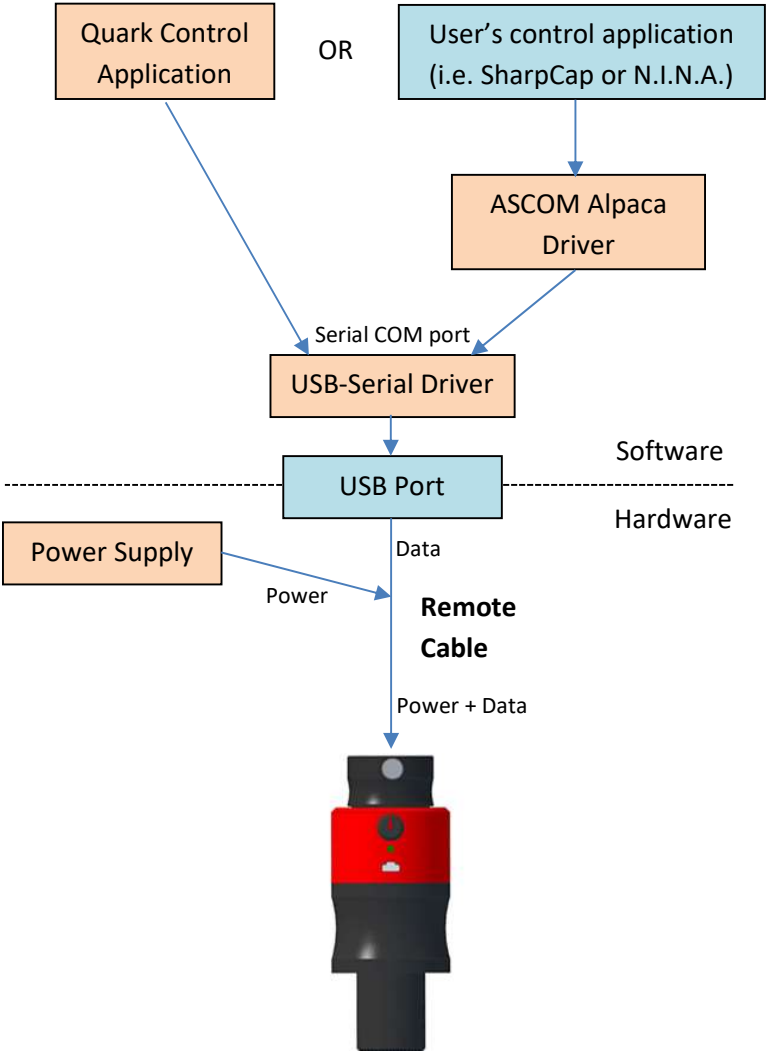
Call: 1 (866) 680-6563

Email: service@daystarfilters.com

Visit: <https://www.daystarfilters.com>

OVERVIEW

Here are the software and hardware pieces involved in controlling a filter remotely.



Software installation

Follow the link below to download and install the remote software package onto your Windows computer. This will install the USB communications driver, Quark Control software program, and ASCOM Alpaca driver.

<https://www.daystarfilters.com/downloads/#software>

You will get a warning that Windows cannot verify the publisher of the software. Click “Install this driver software anyway.” On older OSes click the “Continue Anyway” button.

Cable installation

Please install the driver package before connecting the USB cable.

Attach the correct AC plug adapter for your region to the wall power supply. Plug the large USB A connector into your computer. Plug the small USB connector into the solar filter. The filter should power on, and the computer should make a hardware connect noise.

Quark Control Application

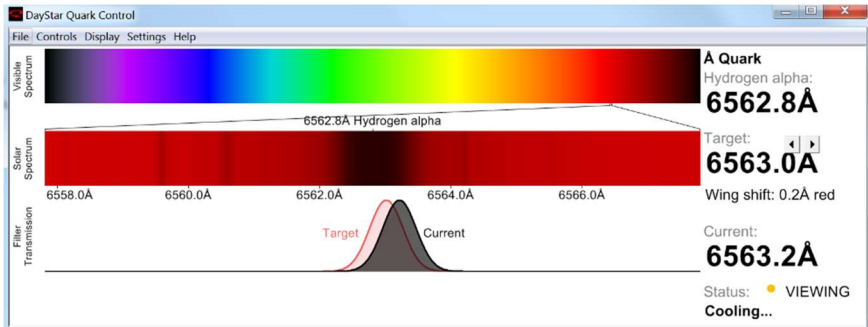
For simplicity, we provide a Windows application named “Quark Control” that can monitor and adjust the wing shift on a Quark filter.

After installing the software and connecting the remote cable, start Quark Control. Click the Auto Detect button to search for a connected Quark.

The main screen then shows the filter status and allows tuning with the left/right arrow buttons.

Pull down menus are provided for adjusting the wing shift in 0.1 and 0.5 angstrom increments.

The filter can also be put to sleep to turn off the heater, for energy conservation while not in use.



To check the firmware version of the attached filter, select the Display | (filter) | Status... menu item.

ASCOM Alpaca driver

For use with other ASCOM compatible software, we are providing an Alpaca driver. Start the Quark Alpaca Driver application, which will open a command line text box you can safely ignore, as well as pop open a web browser window of settings.

Your filter will appear as an 11 position filter wheel with the following “filters” that achieve the following:

Position	Filter Name	Action	CWL (Å)
1	-.5	Blue (down) 0.5Å wing shift (knob fully counterclockwise)	6562.3
2	-.4	Blue (down) 0.4Å wing shift	6562.4
3	-.3	Blue (down) 0.3Å wing shift	6562.5
4	-.2	Blue (down) 0.2Å wing shift	6562.6
5	-.1	Blue (down) 0.1Å wing shift	6562.7
6	0	Factory calibrated center	6562.8
7	+.1	Red (up) 0.1Å wing shift	6562.9
8	+.2	Red (up) 0.2Å wing shift	6563.0
9	+.3	Red (up) 0.3Å wing shift	6563.1
10	+.4	Red (up) 0.4Å wing shift	6563.2
11	+.5	Red (up) 0.5Å wing shift (knob fully clockwise)	6563.3

Position 6 aka “0” corresponds to the factory default center knob position.

Note that if Position is implemented as a zero-based list, subtract one from the position numbers shown.

Alpaca driver settings

Filter COM Port:

Real time filter change status: ☐ *(Check this if you want the filter wheel to report busy for several minutes while the filter tuning settles.)*

Use full power: ☒ *(Only check this if you are using a power injection cable or your computer USB port has 2 amp capability. If unchecked the filter may never reach operating temperature.)*

Default wing shift:

Save

Filter COM Port: Enter the name of the serial COM port connection for the filter. An example would be COM1, etc.

Real time filter change status: ASCOM filter wheels can report “busy” back to the controlling software while the filter wheel is moving. If this box is CHECKED, then the driver reports “busy” until the filter has settled at the new operating temperature several minutes after the command is issued. If the box is UNCHECKED, then the driver falsely reports the filter is “in position” immediately and it is up to the user to wait several minutes before capturing images. If your capture software is hanging or erroring out, try unchecking this.

Use full power: Normally this should be CHECKED if you are using the power injection cable. Normal USB ports can only supply a small fraction of the power required to run a filter. As a safety precaution, if the filter detects an active data connection it will limit current draw to that very small amount. The filter has no way to know the power capacity of the power source. Checking this option will send a command to the filter that it is OK to draw full normal power required for proper operation. You might uncheck this when just installing or testing the driver and software and you don’t want to use the remote cable. In that case the filter probably won’t come up on band.

Default wing shift: If you have a preference for where the filter should be tuned when first starting the driver, enter that here as a decimal, for example -0.5 for blue 0.5Å wing shift. Normally this should be set to 0.

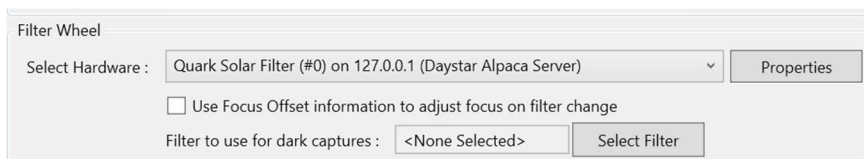
SharpCap Tutorial

Make sure the Quark Alpaca driver is installed and running.

Start SharpCap, then choose File | SharpCap Settings.

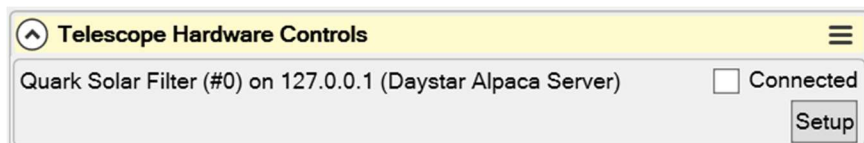
Select the Hardware tab, then scroll down to the Filter Wheel section.

Select the Quark driver from the filter wheel list. Even if you have a Sol Telescope or Gemini, it will be listed as a Quark:



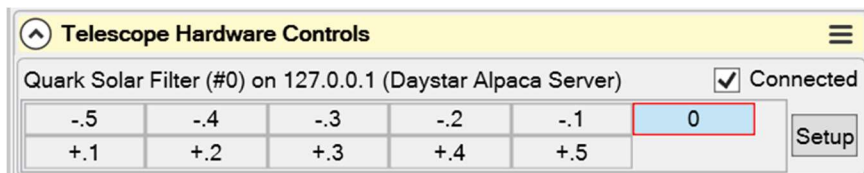
Click OK, then choose and connect your camera.

In the Camera Controls pane that pops open, locate the “Telescope Hardware Controls” section near the bottom of the pane.



Click “Connected”.

Choose a wing shift setting:



Allow several minutes for the tuning change to settle in.

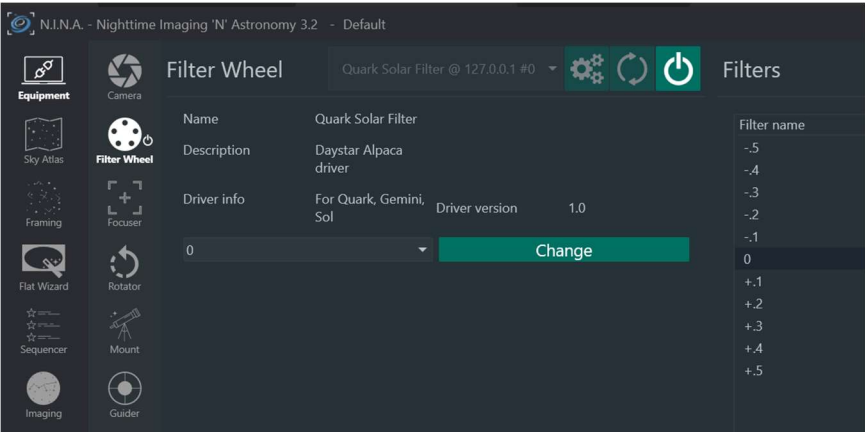
N.I.N.A. Tutorial

Make sure the Quark Alpaca driver is installed and running.

Start N.I.N.A., click on Equipment, then Filter Wheel.

Drop down the selection list at the top of the screen and pick “Quark Solar Filter”.

Click the Connect button that looks like a power button at the far right.



To tune the filter, select a setting from beside the Change button, then push Change.

Allow several minutes for the tuning change to settle in.

Quark Control Troubleshooting:

Problem: Auto detect does not find anything

Solution: Make sure the the filter is connected properly and the LED on the unit is illuminated. You should have heard a notification noise when connecting the USB cable. If all else fails, reboot the computer and try again.

ASCOM Driver Troubleshooting:

Problem: I don't see the Quark Solar Filter in the list of Filter Wheels

Solution: Make sure the Quark Alpaca driver application is running and the filter is connected properly.

Problem: I get "Unable to Connect" errors

Solution: Make sure the Quark Alpaca driver application is running and the filter is connected properly.

Problem: When I change the filter position, my software hangs.

Solution: The filter takes several minutes to retune. Try waiting a few minutes. Otherwise, uncheck the "Real time filter change status" option in the ASCOM Alpaca driver settings. Just realize that you will need to wait a few minutes after making a tuning change for the temperature to soak through the filter.

Problem: LED on the filter never turns green.

Solution: Make sure that you are using the remote cable and the "Use Full Power" option is CHECKED. Allow 5-10 minutes for tuning to complete.

Frequently Asked Questions:

Q: How do I check the firmware version of my Quark?

A: Install the driver software, remote cable, and then run the Quark Control software. Connect the filter and then select the Display | (filter) | Status... menu item. On the lower left the firmware version is indicated.

Q: Why was remote control not included in Quark from the beginning?

A: When Quark was introduced, our customers tended to fall into one of three categories: professional remote observatories that use Quantum filters, amateur visual observers, and amateur imagers sitting next to their scopes. There wasn't much demand for remote control of Quarks. Nowadays remote observatories and telescope rental services are much more popular and so we are happy to bring a Quantum feature down to our Quark, Sol, and Gemini products too. Starting on April 1, 2026 all Quark, Gemini, and Sol filters include the remote firmware feature upgrade. Unfortunately it was never envisioned that there would be a need for field firmware upgrades to Quarks, so there is no mechanism to upgrade the firmware on older units other than a complete disassembly of the filter at the factory. This process is invasive and so we are charging a small fee due to the need to completely retest and requalify the filter after the procedure is performed.

Specifications:

Compatible OS for USB serial driver:	Windows XP, Vista, 7, 8, 10, 11
Compatible OS for Quark Control:	Windows XP, Vista, 7, 8, 10, 11
Compatible OS for Alpaca driver:	Windows 10, 11

Quark, Sol firmware version for control:	v6.20 or later
Gemini firmware version for control:	v9.20 or later

Power:	USB power, 5v 2amp, female Micro-B connector.
Data:	USB A male connector to USB micro B connector.

Wall adapter:	90-240VAC wall adapter, includes US, UK, Euro, and Australian plug adapters.
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Cable lengths:	10 ft (3 meters) computer to filter. 5 ft (1.5 meters) computer to AC power.
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Includes:	Power injection cable, user manual.
Warranty:	3 years

FCC Notice:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for help.

Correct Disposal of This Product:



(Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)



This marking shown on the product or its literature, indicate that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. This product should not be mixed with other commercial wastes purchased this product, or their local government office, for details of where and how they can take item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. Household users should contact either the retailer where they for disposal.

Copyright:

This manual copyright © DayStar Filters 2026, all rights reserved.

Warranty:

Warrantor: DayStar Filters LLC

Elements of Warranty: DayStar warrants, for three years of the original retail purchase owner, this Product to be free from defects in materials and workmanship with only the limitations or exclusions set out below.

Warranty Duration: This warranty to the original user shall last for three years of the original user. The warranty is invalid if the Product is (A) damaged or not maintained as detailed in Operating and Maintenance Manual (B) modified, altered, or used as part of any conversion kits, subassemblies, or any configurations not sold by DayStar, or (C) serviced or repaired by someone other than the DayStar Filters Service Center for a defect or malfunction covered by this warranty. This warrantee includes shipping to and from any point inside the United States. Insurance upon that shipping and/or international shipping and/or any customs and/or import duties attached are the sole responsibility of the owner.

Statement of Remedy: In the event that the product does not conform to this warranty at any time while this warranty is in effect, warrantor will repair the defect and return it to you without charge for parts, service or any cost incurred by the warrantor in connection with the performance of this warranty. THE THREE YEAR WARRANTY SET FORTH ABOVE IS THE SOLE AND ENTIRE WARRANTY PERTAINING TO THE PRODUCT AND IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES OF ANY NATURE WHATSOEVER, WHETHER EXPRESS, IMPLIED OR ARISING BY OPERATION OF LAW, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY DOES NOT COVER OR PROVIDE FOR THE REIMBURSEMENT OR PAYMENT OF INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Procedure for obtaining performance of warranty: Upon discovery of flaw, we require that the user communicate by telephone and/or email to the DayStar Service department to report the failure of equipment. Should technical support be unable to resolve the conflicts of the product, it should be packaged in its original packaging and returned with evidence of original purchase and note describing defect to include owner contact information. The product should be shipped freight pre-paid by traceable means or delivered to warrantor at:

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