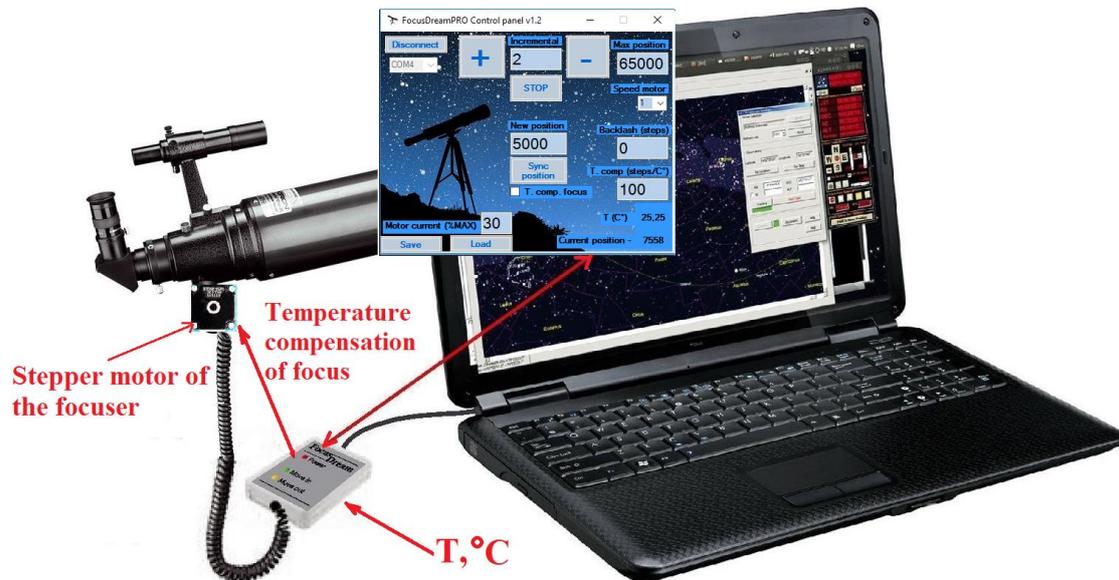


FocusDream

USB ASCOM control unit for electrical focusers

Temperature compensation of focus, power and speed adjustment for various stepper motors, microstep mode for smooth engine rotation.



1. INTENDED USE AND OPPORTUNITIES

FocusDreamPRO - control unit for the stepper motor of electric focusers (Stepper Motor Focus Controller). It is designed for manual and automated focusing process, as well as for automatically maintaining accurate focus depending on changes in ambient temperature.

FocusDreamPRO allows you to focus in manual and automatic mode directly from your PC, using standard astronomical programs such as: MaximDL, FocusMax, BahtinovGrabber and other programs that support the ASCOM platform in the focus section.

FocusDreamPRO also features a proprietary FocusDreamPRO Control panel application that allows you to quickly refocus with the help of the interface buttons or use the left or right mouse button to focus, which can be especially useful for astronomers of fans of planetary photography.

2. Technical characteristics and functionality.

1. Type of applied motors - bipolar stepper motor.
2. Max. Motor current - 0.8A
3. Supply voltage - 12V
4. Software compensation of the mechanical drive of the focuser (Backlash).
5. Function of temperature compensation of focus (T.comp).
6. Interface - USB.
7. ASCOM driver.
8. Application FocusDreamPRO Control panel.
9. Software installation of the stepper motor current.
10. Software setting of the speed of rotation of the stepper motor.
11. Micro stepping mode for smooth rotation of the stepper motor.
12. Program synchronization with the user position of the focuser (Sync position).
13. Programmatically set the number of steps for a single movement of the focuser (Incremental).

3. Completing

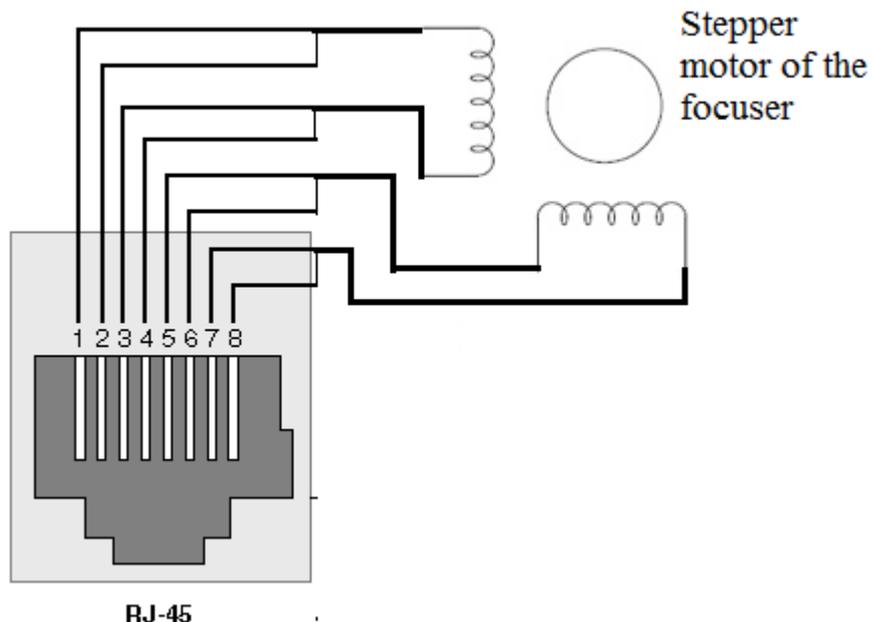


1. The control and display unit FocusDreamPRO.
2. Sensor of temperature.

- 3.USB cable.
4. The cable of the focuser motor.
- 5.CD with software.
6. FocusDreamPRO User's Manual (on CD)

4. PREPARATION FOR WORK

1. Connect the FocusDreamPRO control unit and the drive motor according to the diagram.



2. Connect the temperature sensor to the FocusDreamPRO control unit.

3. Connect the FocusDreamPRO control unit to the USB port of the computer with the cable from the kit. In this case, when prompted to install new hardware, specify the path to the driver on the CD. After installation, a new device will appear in the equipment manager - Silicon Labs CP210x USB to UART Bridge (COMx)

The device is ready to work!

4. Focusing with app FocusDreamPRO Control panel.

1. The FocusDreamPRO Control panel application is located on the CD with the software.

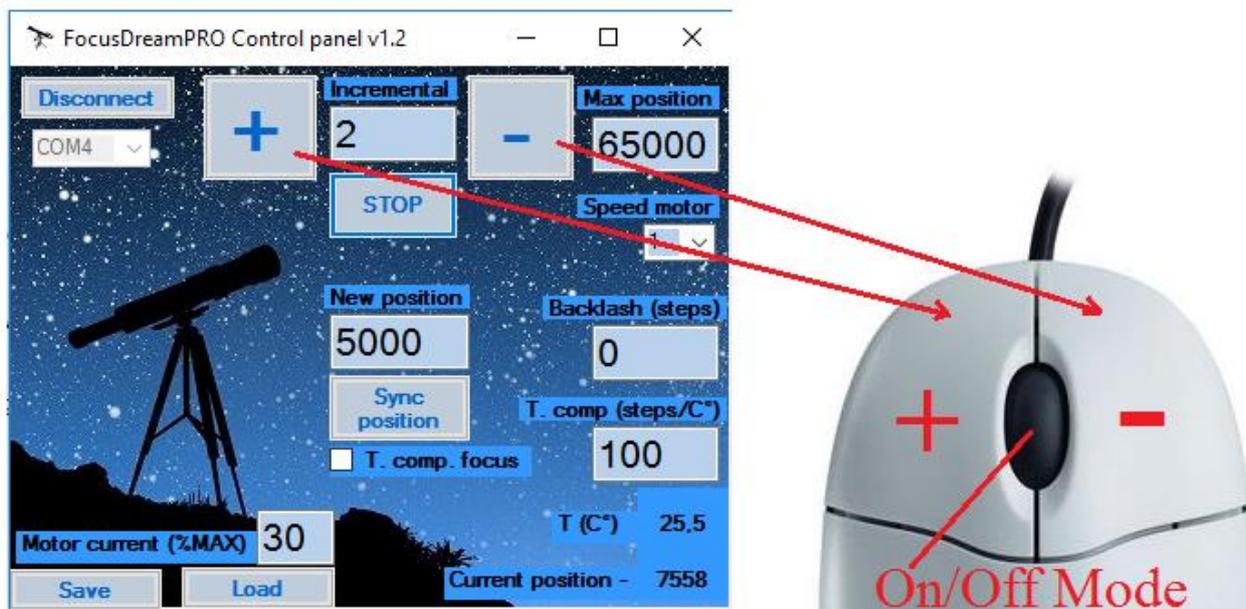
2. After launching the application, select the port corresponding to the Silicon Labs CP210x USB to UART Bridge (COMx) number in the Device Manager in the COM Port Selection pop-up menu.

Use the "Connect / Disconnect" button to link the FocusDreamPRO Control panel application with the focuser.

3. The application supports three modes of focuser control, intermittent, continuous and automatic temperature compensation mode.

Intermittent focus control is performed by virtual buttons "+" or "-" located in the working window of the FocusDreamPRO Control panel application. One click of a button moves the focuser to the number of positions specified in the "Incremental" field.

IMPORTANT! Emergency stop the focuser by pressing the **STOP** button!



Continuous mode of the focuser control is made by the left or right buttons of the computer mouse. Change modes by pressing the middle button or the mouse scroll wheel.

When the mode is changed to continuous virtual control buttons, the focuser will become inactive and the flashing letters "M" and "C" appear, which means **Mouse Control**.

The focuser will continuously move when you press and hold one of these buttons.

IMPORTANT! Continuous focus control mode will be active only if the mouse pointer is in the FocusDreamPRO Control panel application window field.

The interface of the FocusDreamPRO Control panel application has an additional field for setting the maximum position of the focuser - "**Max position**",

Field "**Backslash (steps)**" - to set the compensation value of the backlash of the focuser drive,

Field "**Comp. (Steps / ° C)**" -set the number of steps to compensate for the temperature change in the focus

Field "**Speed (1-5)**" - for setting the speed of rotation of the focuser motor.

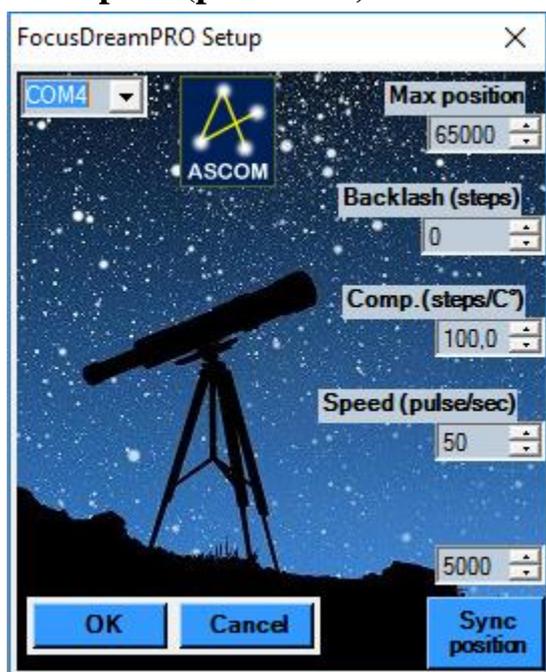
Check boxing "**T. Comp. Focus**" is used to activate the mode of temperature compensation of focus, while manual control of the focuser is blocked.

By setting the "New position" field from 0 to Max position and pressing the "Sync position" button, you can assign the new position to the focuser. This is required for the case where the focuser is at the extreme positions (0 or Max position), and focusing is still not achieved.

In the "Current position" field, you can monitor the current position of the focuser. With the "Connect / Disconnect" button, you can disconnect the FocusDreamPRO Control panel from Virtual Communications Port (COMx) when you are done, before exiting the application.

5. FOCUSING IN ASTRONOMICAL PROGRAMS SUPPORTING ASCOM PLATFORM.

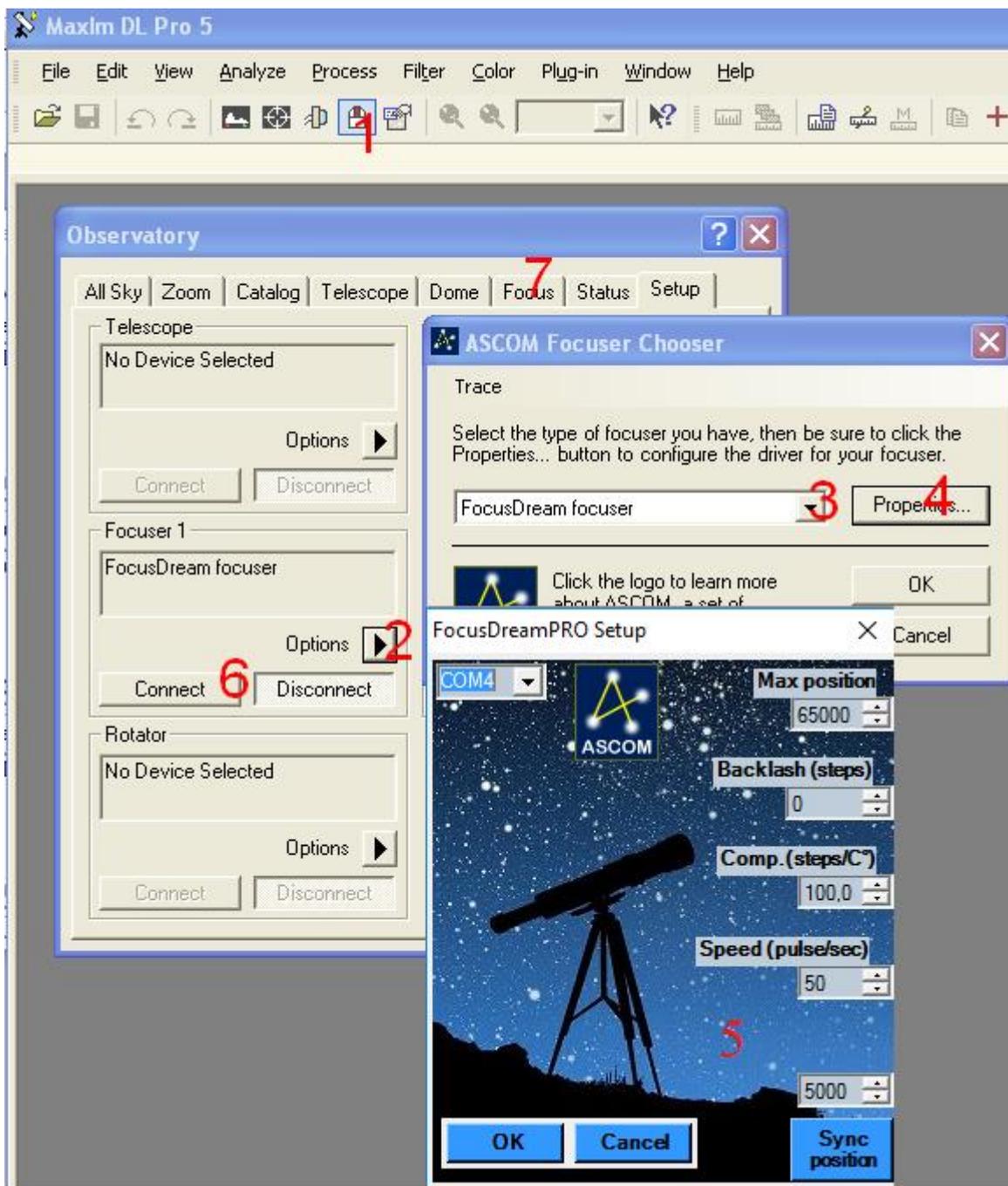
1. To operate FocusDreamPRO with astronomical programs that support the ASCOM platform, you need to install ASCOM Platform 6.x (<http://www.ascom-standards.org>). Next, you need to install the FocusDreamPRO Ascom driver located on the CD. The interface of initial settings, FocusDreamPRO Setup, is the same when you focus from any astronomical program supporting the ASCOM platform. The ASCOM interface of the FocusDreamPRO Setup application has an additional field for setting the maximum position of the focuser - "Max position", the "Backslash (steps)" field - for setting the compensation value of the focuser drive backlash, the field "Comp. (Steps / ° C)" - setting the number of steps to compensate for the temperature change in the focus and the "Speed (pulse / sec)" field to set the speed of the focuser motor.

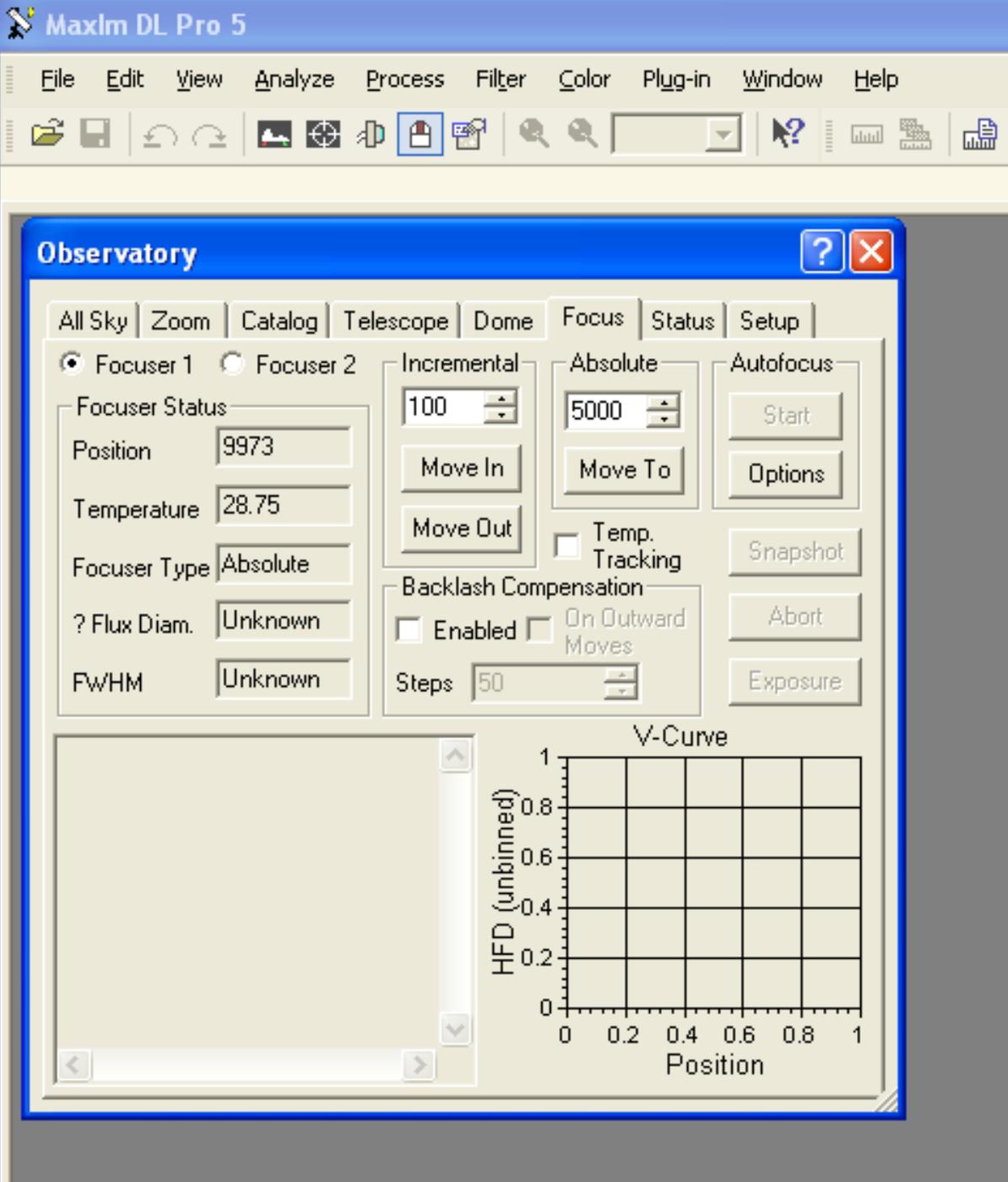


Below, in red numbers, shows the sequence of actions when connecting FocusDreamPRO to the astronomical programs MaximDL, Bahtinov Grabber and FocusMax.

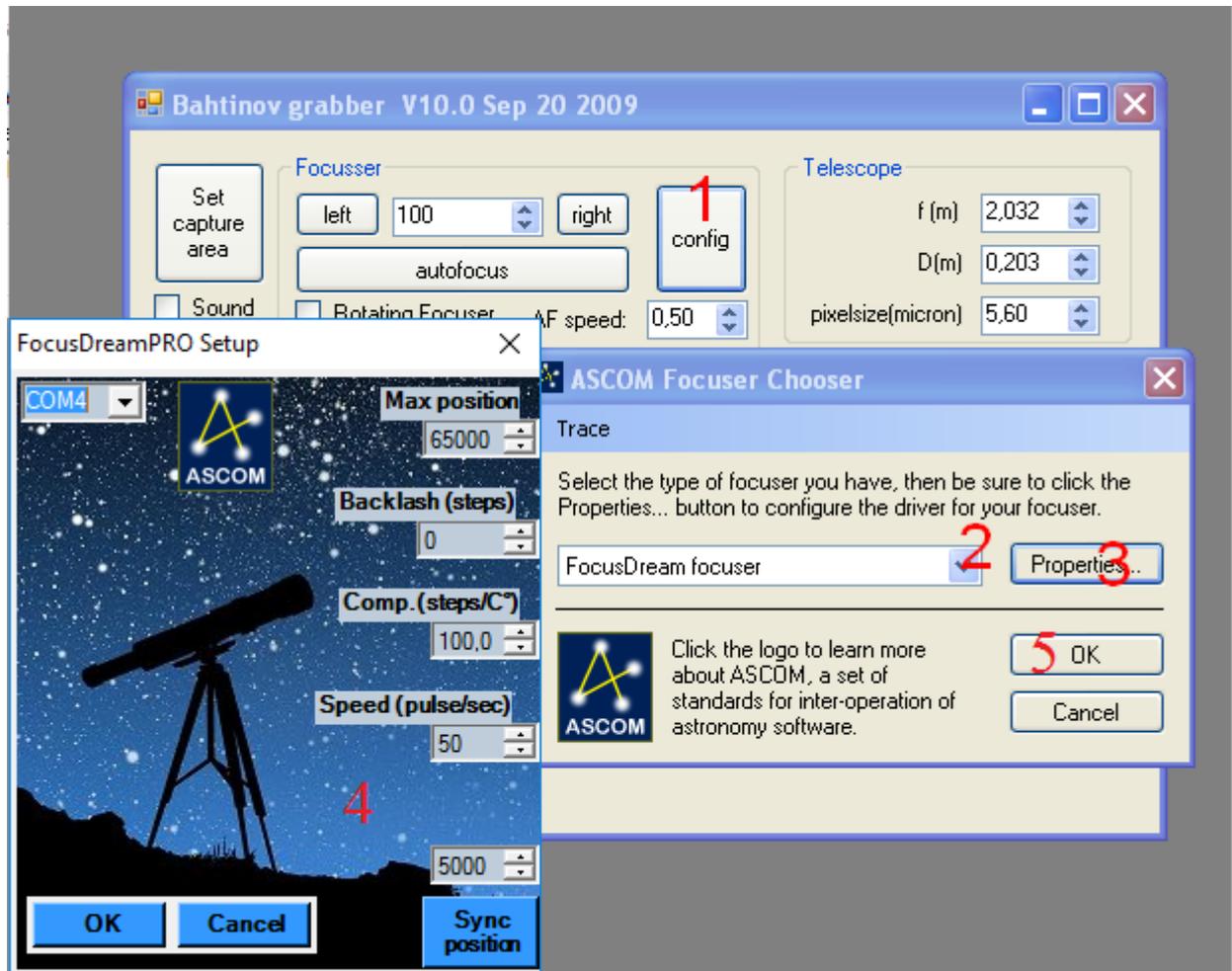
The description of the focusing process in these programs can be viewed on the websites of producers of these programs.

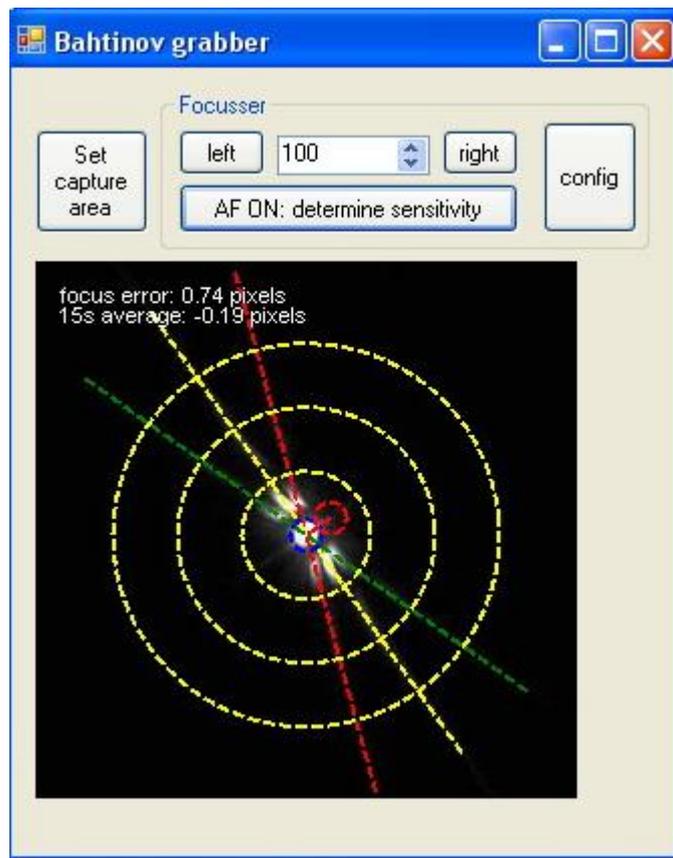
2. Work with the program MaximDL <http://www.cyanogen.com/>





3. Work with the program **Bahtinov Grabber**
<http://www.njnoordhoek.com/?m=200903>





4. Work with the program **FocusMax** <http://www.focusmax.org/>

