# TheSky Controlled Telescope ASCOM driver.

## *Summary*

This driver allows an application to connect to a telescope that's being controlled by TheSky. The telescope can be controlled directly from TheSky or through an ASCOM driver. The exact functionality depends on the mount that's connected and this driver's settings.
It works with TheSky5, TheSky6 and TheSkyX.
Version 6.1 has changed the way that Park works for the later builds of TheSkyX, see the Park and Unpark Behaviour section for details.

## *Installation*

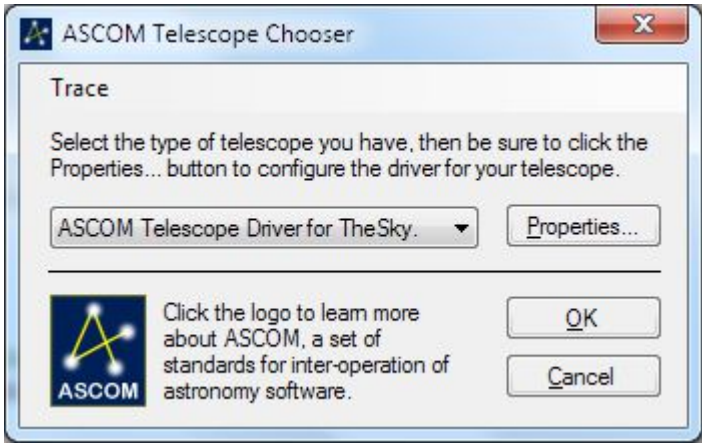
- ASCOM Platform 6.0 or better must be installed.
- A version of TheSky that can control the telescope must be installed.
- Run the installer.

## *Using the driver:*

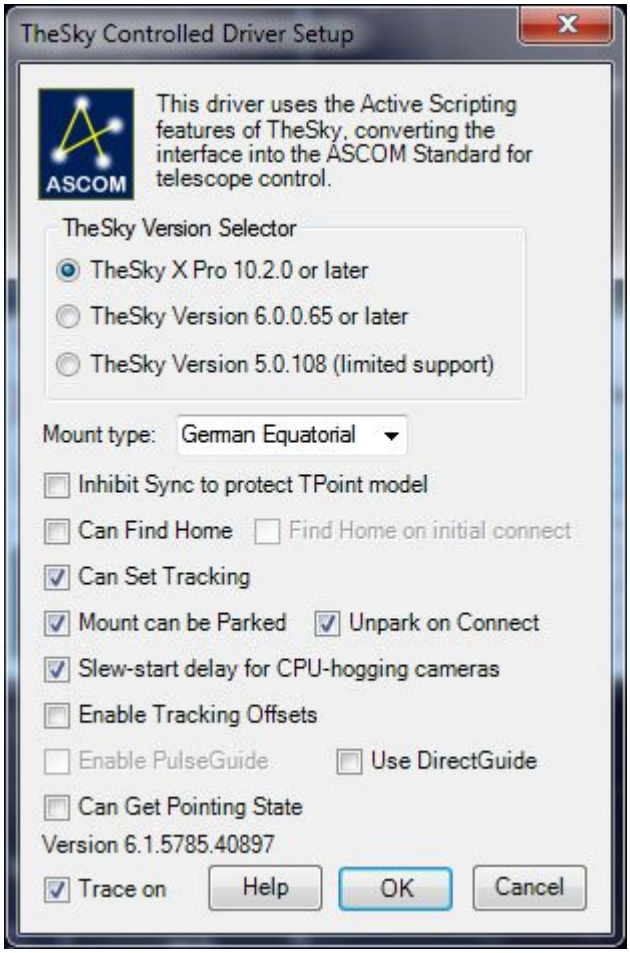
TheSky must be set so the required telescope is selected and ready to connect.
Any initialisation of the mount and its software must be done.

### Set Up:

The ASCOM driver set up must be done at least once. The exact way to select the Driver will depend on the application connecting to TheSky. If it is using the ASCOM chooser then select ASCOM Telescope Driver for TheSky:



You must set up the driver at least once; click on Properties. There are a number of settings that can be set. These settings may not be implemented in the underlying hardwire so setting them may not have the desired effect. The driver will disable settings that it detects cannot be used but can only do so after they have been tried once.




- Select the version of TheSky you are using.
- Set the Mount Type, AltAz, Polar or German equatorial. Polar mounts are fork mounts that do not need to change the pier side.
- If you are using TPoint then check the Inhibit Sync to protect TPoint model checkbox. This will prevent the external application sending sync commands that may affect the TPoint model.
- Check Can Find Home if the mount can find the home position using the scripting control. This may only apply to Software Bisque mounts. If this is not checked Find Home on initial connect will not be enabled.
- Find Home on initial connect is useful to get a Software Bisque mount into a known state by moving to the home switches as part of the connect process.
- Check Can Set Tracking if the tracking state can be changed. This will be checked at startup and disabled if the reported tracking state does not change when a command to change it is sent.
- Check Mount can be Parked if the mount can be parked and you want the park command to be sent from the external application.

- Uncheck Unpark on Connect to prevent the mount automatically unparking when it connects. This feature is only available with TheSkyX build 9316 or more. Other versions of TheSky will always unpark automatically when a connection is made. See the Park and Unpark Behaviour section for details.
- Some cameras will hold up the PC CPU when downloading images, check the Slew-start delay for CPU-hogging cameras option if you get errors after downloading images.
- Enable Tracking Offsets will allow changes to the tracking rate to be applied to both axes. This will only be available if the underlying mount implements this. It is required for guiding, except for Software Bisque mounts which can use Direct Guide.
- If Enable Tracking Offsets is set then Enable PulseGuide can be enabled. This allows guiding on some non Software Bisque mounts.
- For Software Bisque mounts check Use DirectGuide to allow guiding using the DirectGuide method.
- Can Get Pointing State will allow the mount to return the side of pier property. This will only be available for a GEM mount which supports this in its internal control.
- Check Trace On to enable logging of all commands and errors to a log file. This will be essential if you have any problems and need support because the log file helps to show exactly what is happening.

The Help button will display these instructions.
Click OK to save the settings, or Cancel to discard all the changes.

### Operation:

- Ensure that your mount has been selected in TheSky and it can connect to it. There is no need to start TheSky or connect the mount because the driver will do this if it needs to.
- Use your application to connect using the driver.
- You should have control of the mount.

## *Park and Unpark Behaviour*

The way that Park and Unpark behave will depend on the type and version of TheSky.

### TheSky5, TheSky6 and TheSkyX before build 9240

In these versions the ASCOM Park command will Park the mount and disconnect from it. Connecting to the mount will unpark it. The mount cannot be unparked using the driver. The automatic disconnect will mean that commands sent after the mount is parked can fail unexpectedly.

### TheSkyX build 9240 and later

These versions use the new scripting commands **ParkAndDoNotDisconnect**, **ConnectAndDoNotUnpark**, **UnPark** and **IsParked**. The ASCOM Park command uses **ParkAndDoNotDisconnect** so that the driver remains connected. The ASCOM Unpark command is implemented and will unpark a parked mount using Unpark. Connect uses the **ConnectAndDoNotUnpark** command and so *connecting will not automatically unpark a parked mount*. This is the only significant change.

If the current behaviour where the mount is automatically unparked when a connection is made to it is required then check the Unpark on Connect option in the setup dialog.

## *Notes:*

- The Application and TheSky must be running with the same security model, either both as a normal user or both as administrator. Running as a normal user is preferred.
- If you try running them with different security models you will be told that TheSky is running and do you want to start a second instance. You don't but will get unexpected errors, such as *Error 773. Index out of range*.
- If a mount capability is selected but is not available then when it is tried TheSky will report *Error 228. This command is not supported by the selected device.* If this error is seen then the corresponding capability will be disabled in the driver set up. This should prevent the error being seen again because the ASCOM capabilities will then match what the mount can do. This is implemented for the ASCOM *SideOfPier, PulseGuide, FindHome, SetPark, Park, RightAscensionRate* and *DeclinationRate* commands. The capabilities can be re-enabled in the setup dialog.
- If PulseGuide is enabled using both the tracking rate and DirectGuide methods then DirectGuide will be used.
- Some versions of TheSkyX do not seem to handle tracking as expected. The commands to turn tracking on and off seem to work but reading the tracking state does not seem to return the correct value.
- TheSky version 6 seems to require that it is run as administrator when the scripting is set up and the driver selected. Once this is done it can be run in the normal user mode. As stated above TheSky and all applications that connect to it must be run in the same mode.

## *Support*

There are a very wide variety of mounts that can be selected and many of these can be connected either using the Software Bisque control or through an ASCOM driver. These mounts may implement control in different ways and generate errors if things are not implemented.
There are at least three places that things can go wrong:

- In this ASCOM driver.
- In TheSky
- In the mount specific driver, either TheSky or ASCOM

The first thing to do is find out exactly what is really going wrong. The place that is reporting the error may not be where the error is, it may be reporting a problem it has seen.

Things that can help are:

- Check for errors in your set up and configuration. These systems can be complex and it is easy to set things incorrectly.
- Enabling logging where it's available and looking for errors.

- If you want support from SB or the community the following things will be almost essential
    - A clear and detailed description of the problem. “Doesn’t work” is useless, it could mean anything. Screen shots may be useful.
    - A description of the system, including:
        - The type and version of TheSky, including the build number.
        - The Telescope type and how it’s connected. Include any telescope driver versions.
        - The application you are using, including its version.
    - Describe the sequence of operations that will generate the error.
    - Log files. At least a log file for this driver that covers when the error was seen. Log files for other parts of the system may also be useful.

The log files are saved to a file that is located in the My Documents\ ASCOM\logs <date> folder. The file is named ASCOM.SoftwareBisque.hhmm.nnnnn.txt where hhmm is the time in hours and minutes and nnnnn is a number, for example C:\Users\Chris\Documents\ASCOM\Logs 2014-09-01\ASCOM.SoftwareBisque.1644.312660.txt. The log files compress well.