



User Manual

StellLXTSRB

v1.2 beta

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Preamble:-

StellLXTSRB is a Mac OS X application to provide telescope control of Meade telescopes for users of Stellarium 0.9.1 on Mac OS X Leopard (OS X.5).

Expected use would be on a laptop in the field, where both the Stellarium application and the telescope server must operate from the same Macintosh laptop, which is connected to a nearby Meade telescope.

Currently, there exists three known bugs with the Stellarium 0.9.1 release for Mac OS X which have a bearing on telescope control.

1. The Intel build does not supply correct data to any telescope server, thus rendering telescope control non-functional. A work-around is to switch to Rosetta emulation for Stellarium if running on an Intel machine.
2. The telescope server application provided with Stellarium for Macintosh does not seem to work on Leopard (OS X.5). This application provides a work-around for this second issue.
3. The Control-1 keystroke to initiate telescope control does not work as advertised. Instead it brings up a setup dialog. I have chosen Control-2 instead.

Licence:-

This application is NOT public domain software. You are hereby granted a licence to use it if you agree that:-

1. You understand and affirm there is no warranty, either express or implied, for anything the application may or may not do to you, your property, or other persons or property, associated with your use of this application.
2. You will not use this application if such use presents a hazard to persons or property.
3. You expressly indemnify the author of the application against any litigation arising from the use, misuse, or abuse of the application.

If you do not agree to all these points then you are not permitted to use the application.
End of story.

Operation:-

Connection of parts:-

There must be a physical connection between the telescope and the computer running the server. This is a serial connection, usually via a USB-serial adapter. I have used a Keyspan USA-19 device with success. I have also used a generic PL2303 device which plugs into USB, and an Express-34 serial port adapter based on the PL2303. The Keyspan device has probably the best reputation.

A special cable is required to connect to Meade telescopes, the part number varies depending on the particular telescope. I have used a Meade #506 cable to connect to an ETX-80, and a different cable to connect to an LX-90.

Installation of software:-

The USB-serial device will require a driver, dependent on the device. It must be installed before the server will be able to "see" the serial port.

Stellarium will need to be installed, and the config.ini file altered to include the telescope server settings. You can use a text editor such as Textwrangler to edit this file.

config.ini lives here:-

yourHomeFolder/Library/Preferences/Stellarium/config.ini

and you must add the following lines (additions in red). Note the file is long and you may need to scroll to the bottom to see the [astro] section. I placed the [telescopes] portion right at the bottom of the script.

[astro]

```
...  
flag_telescopes          = true  
flag_telescope_name     = true
```

...

```
[telescopes]  
2                       = ETX:TCP:localhost:10000:1500000
```

2 at the start of the telescopes section refers to the Control-2 key which will activate the Goto function and start the telescope slewing to the destination. Control-1 does not work. The ETX is the label for this telescope. Right now, the label is not visible, but will become so in a future release.

TCP refers to the TCP/IP protocol and must be included.

localhost is the name for the local computer; if Stellarium resides on another computer on the network then you would type its address here (e.g. 10.8.100.101).

10000 is the port number Stellarium will send on and which the telescope server will listen on.

1500000 is the delay in microseconds between Stellarium sending something and it sending something else.

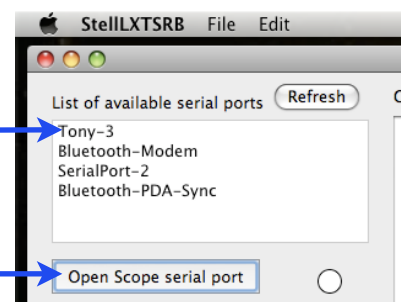
Sequence of activation:-

Plug in the serial cable to the telescope and the Mac. Do an alignment on the scope so it is ready to Goto to a target you choose on the Meade handcontroller.

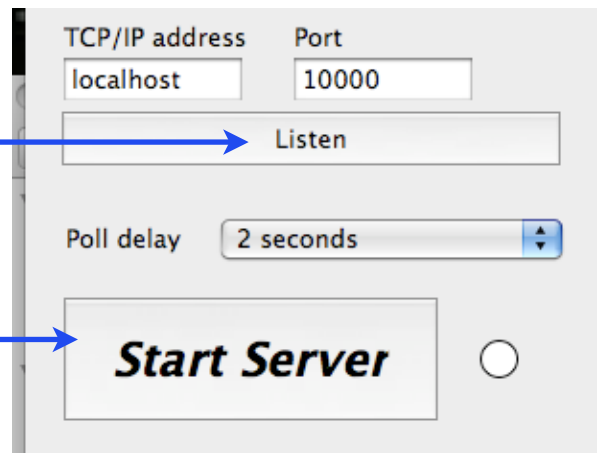
Launch Stellarium.

Launch the telescope server.

Select the server's serial connection and Open it.



Tell the server to Listen to Stellarium:-

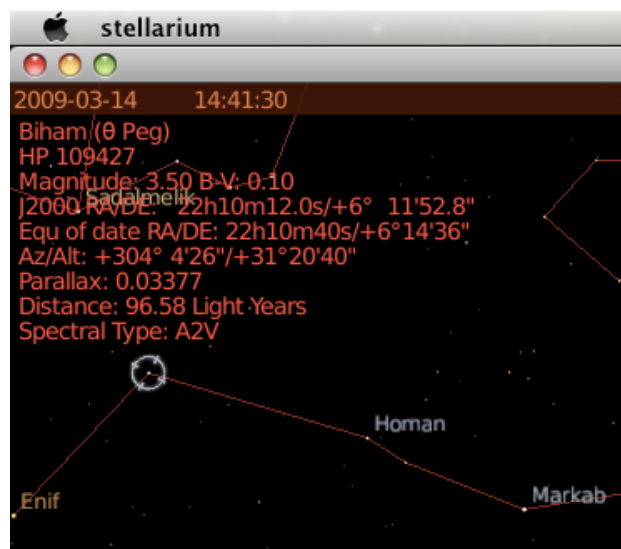


Then Start the server:-

That's all. You can choose to minimise the server to the Dock (click on the Yellow button at the top-left of the window) if you want.

The server is quite verbose and will keep a log of its transactions with Stellarium, which is of some interest to the geeks among us.

Now return to Stellarium. In the pic below, the operator has clicked on Theta Pegasi (Biham) in Stellarium's main window. Biham now has a rotating circle around it. To make Stellarium slew the telescope server to Biham, press Control-2 (that is, hold down the Control key, then press 2 on the main keyboard just above the Q key). Stellarium should tell the server the co-ordinates to slew to, then the server will talk to the scope. You can watch the transaction as it happens on the server's window.



END DOCUMENT

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