

Meade LS6 & LS8 LightSwitch Primer

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Introduction

For setting up and using your telescope please refer to the comprehensive manual that came with your LS telescope. This document is targeted to new owners and covers a number of topics as follows:

Traversing the handset menus	p1
Restoring the telescope to factory settings	p1
Properly shutting down the telescope	p1
Telescope alignment primer	p2
Calibrating the Eclips camera	p4
Training the Azimuth and Elevation Drives	p4 – p5
Star Aligning with a restricted horizon	p6

General Information

Traversing the Handset Menus

The **MODE** Key on the Autostar III handset cycles the telescope through its three different modes; **Menu** Mode, **Info** Mode and **Skymap** Mode.

During most telescope operations, pressing the **MODE** key will stop the current operation.

Restore to Factory Settings

If you are having difficulties with the telescope, the first step to getting back on track is to reset the telescope to factory settings. This will enable you to follow the telescope instruction manual as if you used the telescope for the very first time.

To reset the telescope to factory settings, the option is under:

Menu Mode →

Preferences →

Restore Factory Defaults

Please refer to page 4 of this document for the location of this option in the Menu tree.

Telescope Shutdown

Select “Shutdown” from the main top level menu. After the telescope has moved to its storage position and the AutoStar displays “Turn Off Telescope”, flip the LightSwitch to the OFF (0) position.

Menu Mode →

Shutdown Scope

Please refer to page 4 of this document for the location of this option in the handset’s menu tree.

Telescope Alignment

Please follow the instructions in the LS LightSwitch manual to align your telescope. If the telescope cannot find the stars during auto-alignment and assuming a clear sky, please refer to the possible causes and remedies as outlined below. These are listed in a recommended order but feel free to choose the order if you are experienced.

Tripod Platform

Ensure that the telescope is level prior to alignment and the tripod leg knobs tight. Also, ensure that the tripod does not sink into the ground, this can happen when the telescope is on grass or on a soft surface.

Power

Powering your LightSwitch telescope from batteries will prove expensive in the medium to long term. We recommend a 17Ah 12VDC (pin positive) Power Tank or a good quality, regulated/switch-mode 12VDC 5A mains Power Supply (pin positive).

Please note that low power levels including weak batteries or inadequate power supply will cause your telescope to automatically reset.

Firmware

You may have an older version of the firmware or the firmware has been corrupted. You would need to update your telescope's firmware. The latest version of the firmware at the time of writing is **V1.6D**.

Stretched Cables

Stretched cables can cause various issues including poor communication connections and power loss. Both, will affect alignment and operation.

ECLIPS Camera Field of View

If you have alignment issues, ascertain that you are able to see the alignment star through a wide angle 40mm eyepiece and once the telescope has slued to the target star. That you can see the star through your eyes is no guarantee that the ECLIPS camera can also see it. The ECLIPS camera is at a lower position when compared to your eyes and has a comparatively much smaller field of view.

Please keep in mind that an obstructed horizon and passing clouds could also cause automatic telescope alignment to fail.

ECLIPS Camera Cap

Please make certain that you have removed the Eclips camera cap.

ECLIPS Camera Condensation

Ensure that there is no condensation on the camera lens. You could consider making a small dew shield to protect the camera lens from condensation.

ECLIPS Camera Dark Calibration

Dark Calibration should help with the "not finding stars" issue during auto-alignment. It's something that can be done indoors. The handset will lead you through this procedure once Dark Calibration has been selected. The **Dark Calibration** procedure is under the **Utilities** Menu on your handset.

Telescope Calibration

You could improve telescope accuracy in general by performing the **Azimuth Drive**, **Elevation Drive** and **Finder Center** procedures under the **Setup** Menu on your handset. It's something that can be done during the day. Take care not to point your telescope to or close to the Sun during this procedure.

Magnetic Interference

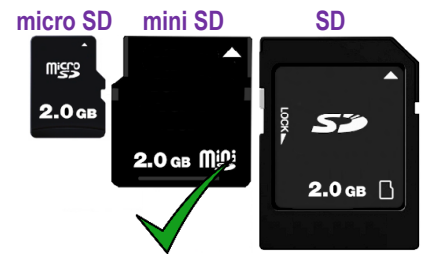
Large metal objects close to telescope like a car, motors, magnets and atmospheric magnetic fields in general could affect the alignment and operation of any telescope that relies on its on-board electronic compass to find North.

Firmware Update Using a Pre-programmed mini SD Card

Firmware Update Basics

You will need a pre-programmed 500MB-2GB mini SD card to update your telescope's firmware. Alternatively, a 500MB-2GB micro SD can be used in conjunction with a mini SD adapter card.

NOTE: You can also program your own mini SD card using the Meade Autotostar Updater (ASU) software that can be downloaded from the Meade Instruments website.



We strongly recommend that you always update the LightSwitch telescope's firmware via a 500MB-2GB mini SD card as outlined in this document and not via a PC. Other capacity SD cards will not work.

Instructions

1. Use a reliable power supply.
2. Ensure that your Meade LS telescope is switched off.
3. Insert the pre-programmed Mini SD card supplied into the telescope's mini SD slot as described under the **Inserting the mini SD Card** heading in this document.
4. Switch ON the telescope and wait for around 10 seconds for the hand box to respond. Then follow the instructions on the hand box display.
5. Wait for approximately 30 minutes for the firmware to be updated.
6. Do not remove the mini SD card or switch off the telescope while updating the firmware or the telescope may need to be returned back to Meade Instruments Inc. for re-flashing.
7. The AutoStar III handset will confirm that the software has been updated.
8. Switch OFF the telescope.
9. Remove the Mini SD card from the telescope.
10. The firmware update is now complete.

CAUTION: Do not plug or unplug the power supply or handset to/from your telescope while the telescope's ON/OFF switch is at the ON position.

Inserting the mini SD card



Please observe the correct orientation of the mini SD card when inserting it into the mini SD slot on the telescope.

It is important that you do not force the mini SD card into the slot.

Slowly press the mini SD card into position making certain that the mini SD card is not at an angle when inserted. If the mini SD card is at an angle or facing the wrong way it will stop half way and you will be unable to push it into position. Finally, push the mini SD card in all the way so that it 'clicks' in place.

Note that once you switch ON the telescope with the mini SD card inserted, the red power LED should remain switched on. If the telescope is unable to read the mini SD card for any reason, the red power LED will flash intermittently for a short period of time and/or the handset display will remain blank. If the update starts but takes too long to complete (typically over 30 minutes) the files on the mini SD card may have been corrupted. Note that in some cases, leaving the telescope switched on overnight may still complete the update.

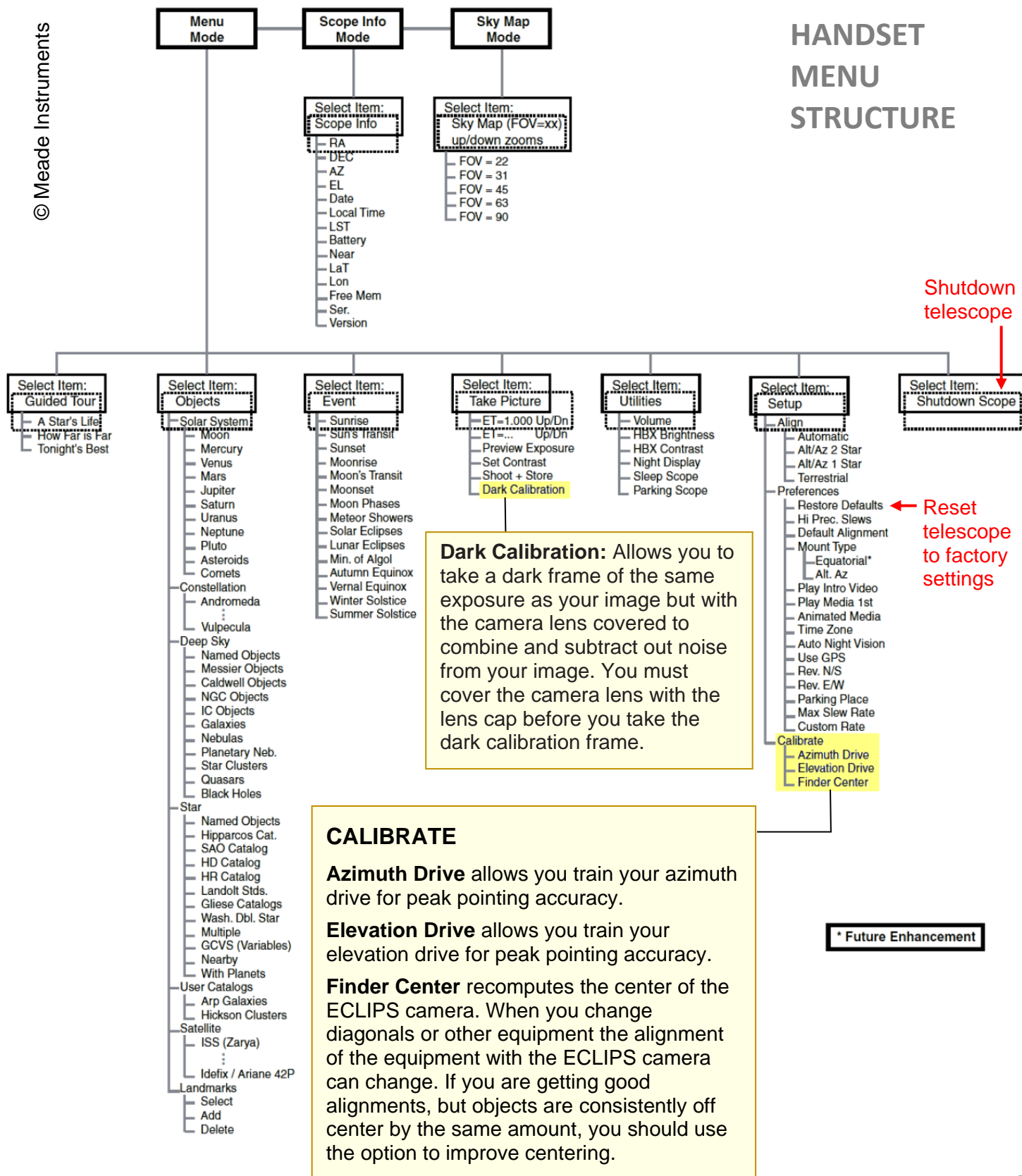
CAUTION: Please make certain that when you insert a micro SD card into a mini SD adapter this is done with care. In rare cases, it is possible that the contacts in the mini SD adapter end up over the top of the micro SD card rather than below.

LightSwitch LS6 & LS8 Calibration

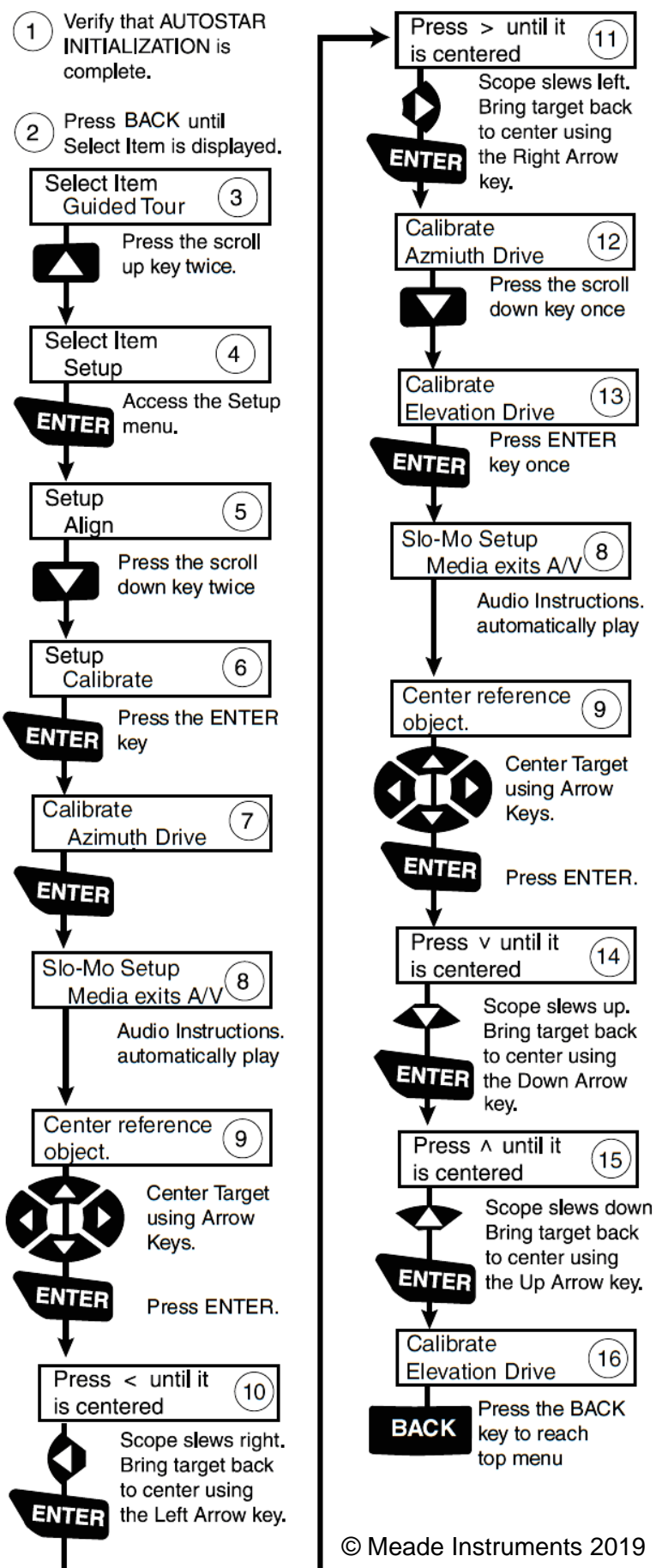
Calibrating your Lightswitch telescope will enable you to tune several aspects of the telescope for peak performance including pointing accuracy and camera image quality which helps with auto-alignment. Calibration can be done during daytime but you must take care not to point your telescope to or close to the Sun since this cause to both your telescope and eyes.

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HANDSET MENU STRUCTURE



Training the Azimuth and Elevation Drives



CALIBRATE: Training the Drive

Perform this procedure if you are experiencing any pointing accuracy problems.

NOTE: Use a terrestrial object, such as a telephone pole or lamp post, to train the drive. Complete this exercise once every 3 to 6 months. Take care not to point the telescope to or close to the Sun.

Calibrate allows you to precisely tune several aspects of your telescope for peak performance. Calibration options include:

- **Azimuth Drive** allows you train your azimuth drive for peak pointing accuracy.
- **Elevation Drive** allows you train your elevation drive for peak pointing accuracy.
- **Finder Centre** recomputes the centre of the ECLIPS camera.

Star Aligning with a Restricted Horizon

An obstructed horizon and passing clouds could cause automatic telescope alignment to fail. Having said that, it is still possible to align your Lightswitch telescope using 1-Star or 2-Star Alignment.

You will first need to disable GPS so that the telescope does not automatically attempt to auto-align, this saves time every time you switch on the telescope. The option is under **Menu → Setup → Preferences → GPS**.

Once this has been done you will need to first enter the correct Date, Time, Latitude, Longitude and Daylight Saving manually. These options can be found under **Scope Info → ...**

Once this is done, choose 2-Star Alignment since it is more accurate i.e.

**Menu →
Setup →
Align →
Alt/Az 2 Star**

The telescope will first find level and North if it has not done this already. It will then automatically slew to the first Alignment Star and ask you to centre it and press Enter. It will then automatically slew to the second Alignment Star and ask you to do the same. Once 2-Star Alignment is complete, you will be able to issue GOTO commands as normal.

If during Star Alignment the current Alignment Star is behind an obstacle you can choose another one by scrolling down the list of available stars.

Finally, it would be an idea to familiarise yourself with the 2-Star Alignment procedure (no GPS) indoors so as to become familiar with it and with the menus. Also, remember that to go up or down level in the menus you can press the MODE key.