

# Operating Instructions

## PEC Utility Tool

### For use with Meade LX200GPS and RCX400 Telescopes

#### PEC Utility

The PEC Utility Tool allows you greater control over the Periodic Error Correction functions of your LX200GPS or RCX400 telescope.

During PEC Training, small corrections made to keep a star precisely centered by a DSI, LPI or via hand controller inputs, are recorded and remembered by your telescope so that they may be automatically replayed by the SmartDrive™ system. After you have performed the PEC training procedure, the PEC Tool allows you to further refine the PE corrections made by SmartDrive.

PEC Utility option is located in the AutoStar Suite telescope menu and is available with the AutoStar Suite Update, on the meade.com website.

#### Functions of the Buttons

During Periodic Error Correction, you will move the Autostar Arrow keys to keep a star centered in the crosshairs of a reticle eyepiece. After you have performed the PEC procedure, the PEC Utility tool allows to further tweak the corrections you have just made.

**Comm Port:** Connect the telescope to your PC using the supplied RS232 cable. Connect one end to one of your PC's serial ports and the other end to the RS232 port of your telescope's computer control panel. Enter the comm port you have chosen in the Comm Port field.

**Read from Scope:** Press this button as the first step in the PEC Utility procedure. It reads the PEC data currently in your telescope and presents this information in an intuitive on-screen graph.

**Sharpening:** The sharpening function makes the corrections you made with the Arrow keys be applied more aggressively while chasing small variations in the tracking.

**Smoothing:** The smoothing function makes the corrections you made with the Arrow keys be applied less aggressively while chasing small variations in tracking.

**Scale:** *Smoothing* tends to reduce the overall magnitude of the correction, so it may be useful to select the scale function to re-enlarge the correction magnitude after smoothing.

*Sharpening*, on the other hand, tends to increase the magnitude of the corrections applied. It may be useful to select the scale function to slightly reduce the correction magnitude after sharpening.

Before smoothing or sharpening, take note of the highest peak value on the graph. After you finish smoothing or sharpening,

enter a number in the Fatcor box to rescale the graph back up to its highest peak. *Hint:* Enter a number between 1 and 2; e.g., 1.2.

**Shifting the PEC:** While using the Autostar handbox, you applied corrections with the Arrow keys *after* deviations were observed. That is, you would see a deviation and then correct it, a little late due to the lag between seeing and reacting by pushing an Arrow key.

The "Shifting the PEC" now allows you to shift the corrections forwards or backwards to compensate for the time lag. Press the Right Bracket to move the corrections forward or the Left Bracket to move the corrections backwards.

**Import from/Export to CSV:** This allows you to import or export the PEC data to or from an Excel file. You may manipulate the data inside the Excel file, if so desired, and send it back to the PEC Utility.

This is also an excellent way to save your corrections for future sessions. Save the file in an Excel format for future reference.

**Send to Scope:** Press this button as the last step in the PEC Utility procedure. This step sends the new PEC corrections that you have just made back to your telescope.

If you have a question concerning use of the Meade **AUTOSTAR SUITE** or **PEC UTILITY**, call the Meade Instruments Customer Service Department at (800) 626-3233. Customer Service hours are 8:00 AM to 5:00 PM, Pacific Time, Monday through Friday.



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