Operating Instructions
Starlock PEC Utility Tool
For use with Meade Starlock Equipped Telescopes Only

PEC Utility
The PEC Utility Tool allows you greater control over the Periodic Error Correction functions of your Starlock equipped telescope. During PEC Training, Starlock monitors a guide star and passively maps the RA worms periodic error using its narrow field camera. When PEC training is completed, the telescope mount automatically replays this mapping using the SmartDrive™ system.

After you have performed the PEC training procedure, the Starlock PEC Tool allows you to further refine the PE corrections made by SmartDrive. The Starlock PEC Utility program is available on the meade.com website. When downloaded the program will appear in your Meade program folder as "Starlock PEC Tool".

Functions of the Buttons

Comm Port: Connect the telescope to your PC using Meade's 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 onscreen graph.

Sharpening: The sharpening function makes the error corrections determined by Starlock be applied more aggressively while chasing small variations in the tracking.

Smoothing: The smoothing function makes the error corrections determined by Starlock 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.
S*harpening,* 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 Factor 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: If the PEC was manually trained by the user using the

Autostar handbox, the corrections were applied 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 Starlock equipped telescope.

If you have a question concerning use of the Meade **STARLOCK PEC UTILITY,** call the Meade Instruments Customer Service Department at (800) 626-3233. Customer Service hours are 7:00 AM to 3:00 PM, Pacific Time, Monday through Friday.