Autoguiding the Remote Telescope

When the ST-10XE is installed in the C14, you can use the built-in autoguiding chip to autoguide long exposures. For most exposures with the ST-10XE, we recommend 10 to 15-minute exposures. Autoguiding is usually necessary for exposures longer than 3 minutes with this setup.

Click the Autoguide Link

This will get you started. The link can only be found on the Star Chart page, near the bottom (see image at right).
**Autoguider Setup**

The Autoguide link displays the setup options for the autoguider. The text on the page explains what the terms are and offers suggested values. If you need help with this page, contact Ron at ron@wodaski.com.

**Exposure time**

The length of the guide star exposures. The Paramount ME is a very capable mount, allowing you to use longer exposure times with penalty. The default is 10 seconds, but exposures of 15-30 seconds are fine. Such long exposures can help reveal dim guide stars.

**Aggressiveness**

Determines how aggressively the Paramount applies guide corrections. Since the mount does a good job on its own, guiding generally only needs to make the occasional adjustment. Low values of 3-5 are good. The highest value is 10, which results in the most aggressive correction.

**Declination**

The declination angle of the telescope. This is entered automatically, but you can change it if needed.

**Delay**

If you require a delay between guide exposures, enter the value here. Rarely used.

**Imaging on East side**

If the telescope is pointing to the east, check this box so that guide corrections are correctly oriented. Like declination, this should automatically be checked when the telescope is pointing east.

Click the Take Image button to save the setting and take an exposure with the guide chip.
The Guide Exposure

After clicking the Take Image button, the page at right displays progress during the exposure. If you need to abort the exposure for any reason, click the Abort Exposure button.
Select Guide Star

When the guide exposure is complete, you will see a 3x3 binned image taken with the guide chip. Choose a bright guide star, but not overly bright. Saturated stars do not make for good guiding. Any star that is bright enough to clearly be a star is a good guide star candidate. Click in the image on the star you want to use as a guide star.

If you do not see a guide star, or if there are problems, click the “Click here to start over” link to get a fresh start.
Waiting for Guiding to Start

The page at right appears as guiding is getting started. Based on your exposure time, it suggests how long to wait for the guide star to settle down for accurate guiding. Typically, we recommend waiting for 5x to 10x the length of the guide exposure before you start imaging. That allows the mount to completely settle down and for guiding to be accurate. Prior to that time, there may still be small movements of the guide star as it homes in.
Autoguiding in Progress

The page at right displays during the autoguiding session. It will update the guide star after every sixth guiding exposure, allowing you to keep an eye on guiding to make sure nothing funky is happening. If the guide star disappears, gets too dim, or otherwise isn't what you want, click the Stop Autoguiding button and investigate.
Setting up Field of View Indicators in TheSky

Field of view indicators are very useful for planning your imaging sessions. They can show you what objects will fit on the chip, for example. But you can also use the FOV indicator to plan what guide star you will be using when imaging.

Field of View Indicator

The image at right shows what the correctly set up Field of View indicator looks like in TheSky6. The large rectangle is the imaging chip; the small rectangle is the guide chip. Note that the telescope has been aimed so that a guide star falls on the guide chip. Sometimes you will have more than one start; sometimes there won't be a star.

If you don't see a star in TheSky, there may still be a dim star available for guiding, but you won't know for sure until you take a guide exposure.

If you don't find a guide star at first, try a longer guide exposure before you give up.

Note: in a few weeks, we will have an external guide scope installed, and this will take care of the situation where a guide star is not available for the built-in guide chip.
**The Field of View Indicators Dialog**

Click the Add button to add a FOV indicator for the Remote Telescope.

**Adding a FOV Indicator**

The dialog at right shows the selections and fill-ins for the new FOV indicator. The description can be anything you like. The Type must be SBIG ST-10XE/XME with TC-237. The height and width should be entered as shown.