iOptron® iPolar™ Electronic Polar Scope
Operation Manual

Product #3339

1. Connect iPolar to a PC and Download iPolar Software

(1) Connect the iPolar Electronic Polar Scope (EPS) to you PC USB port
(2) The iPolar EPS will automatically install the driver if it is the first tome connecting to the computer
(3) You should see "iOptron iPolar" under Camera in computer Device Manager.
(4) Goto www.ioptron.com to download iPolar software and save on your computer
(5) The iPolar software needs Windows Vista, 7, 8, 8.1, 10 or later version, 32 bit or 64 bit operation system, with .NET Framework 4.6 or later version.
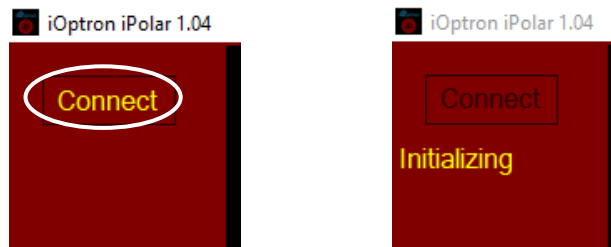
2. Polar Alignment

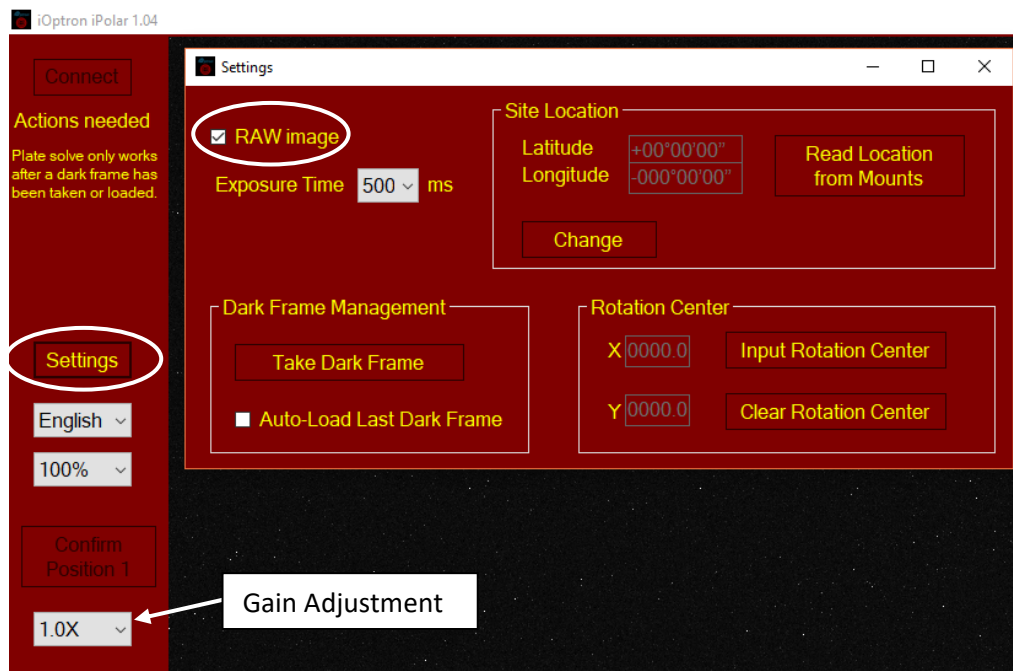### Step 1: Adjust Equatorial Mount Pointing Direction

Set the counterweight shaft at the lowest point. Adjust the altitude to you latitude. Point the mount to true north (or true south if located in southern hemisphere).
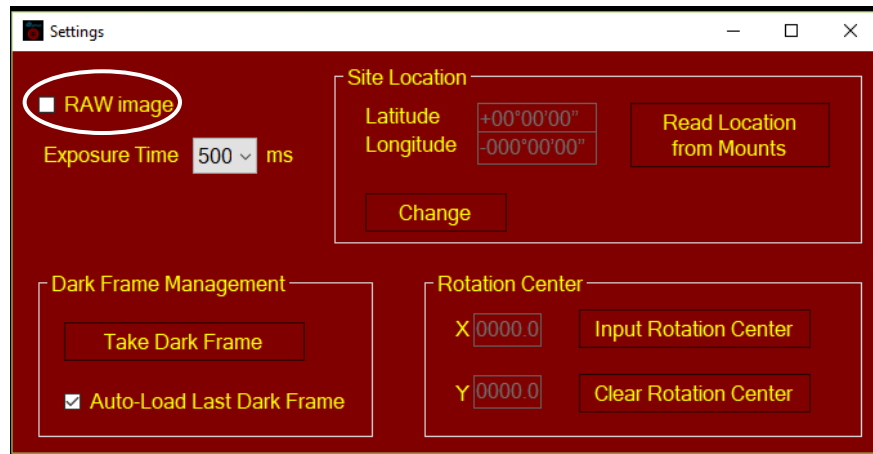
Step 2. Initialization iPolar

(1) Run downloaded iPolar Software to bring up the polar alignment main menu

(2) Click on "**Connect**" button to connect the iPolar to the computer. The software will start to initialize the process the camera is connected successfully.

(3) If this is your first time using the iPolar, you'll need to take the dark mage of the camera. Click on **Settings** to bring up Settings Menu.

(4) Check **RAW Image**

(5) Adjust **Exposure Time** and **Gain** (from 1.0X pull down menu in main display menu) to obtain a sky image with clear stars displayed

(6) Click on **Take Dark Frame**

(7) Follow the on screen instruction to cover the camera, finish taking dark frame and uncover the camera

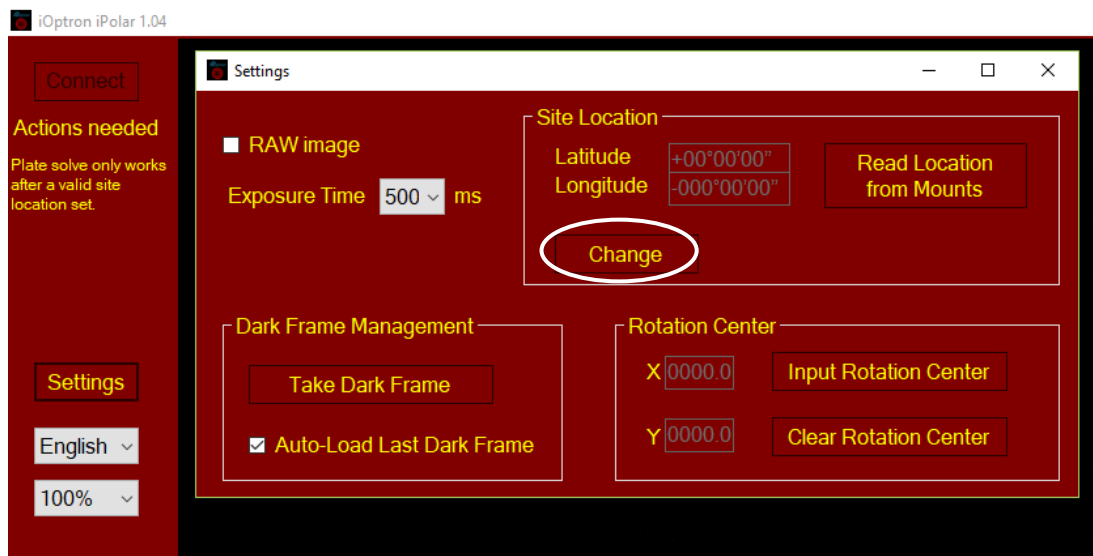(8) Uncheck **RAW Image**. You may check the **Auto-Load Last Dark Frame** for next time use. Close Setting Menu
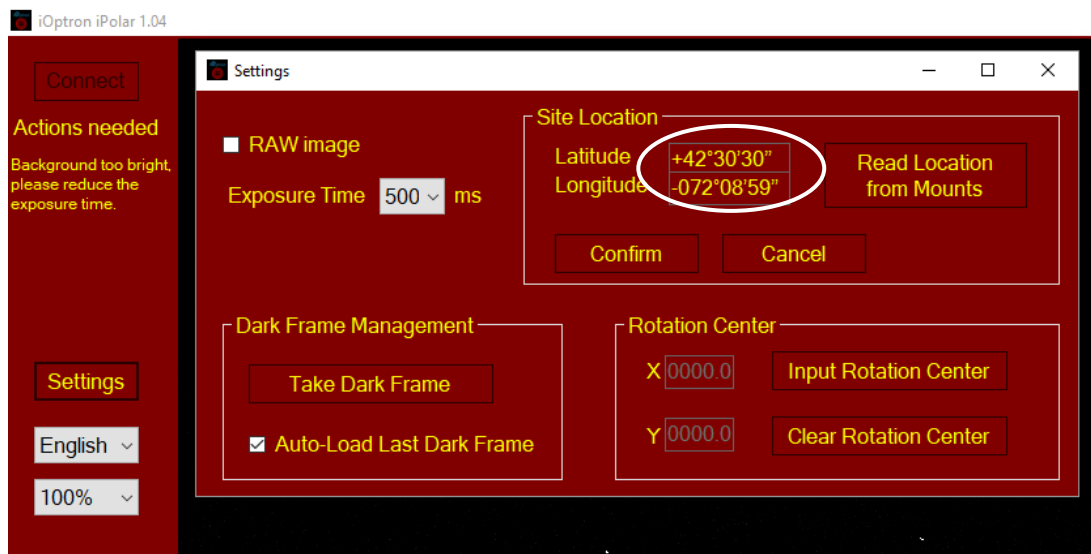

Step 3. Set Location

There are two ways to set your observing location info:

<u>**Enter Manually**</u>

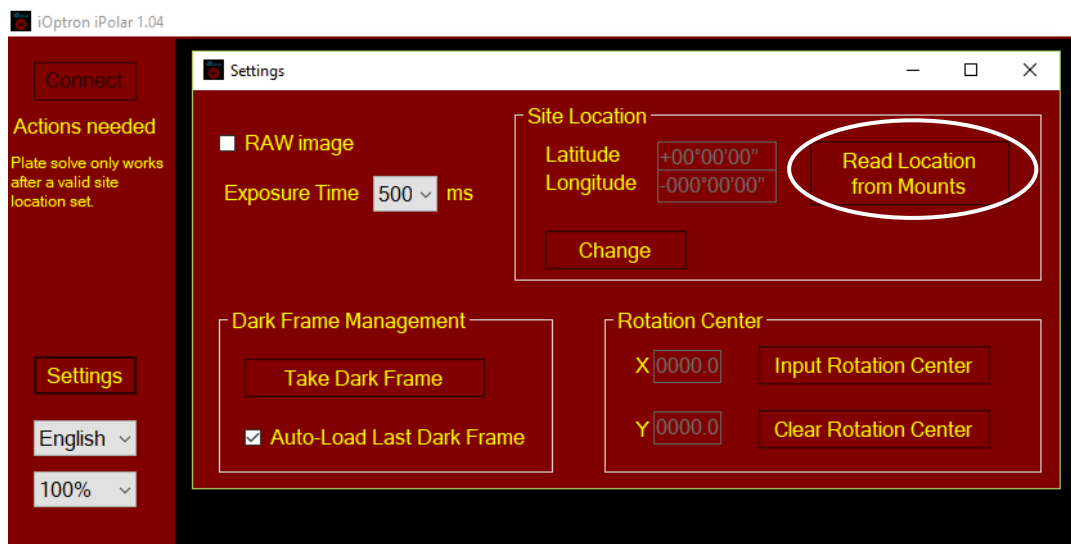(1) Click on **Settings**
(2) Click on **Change**
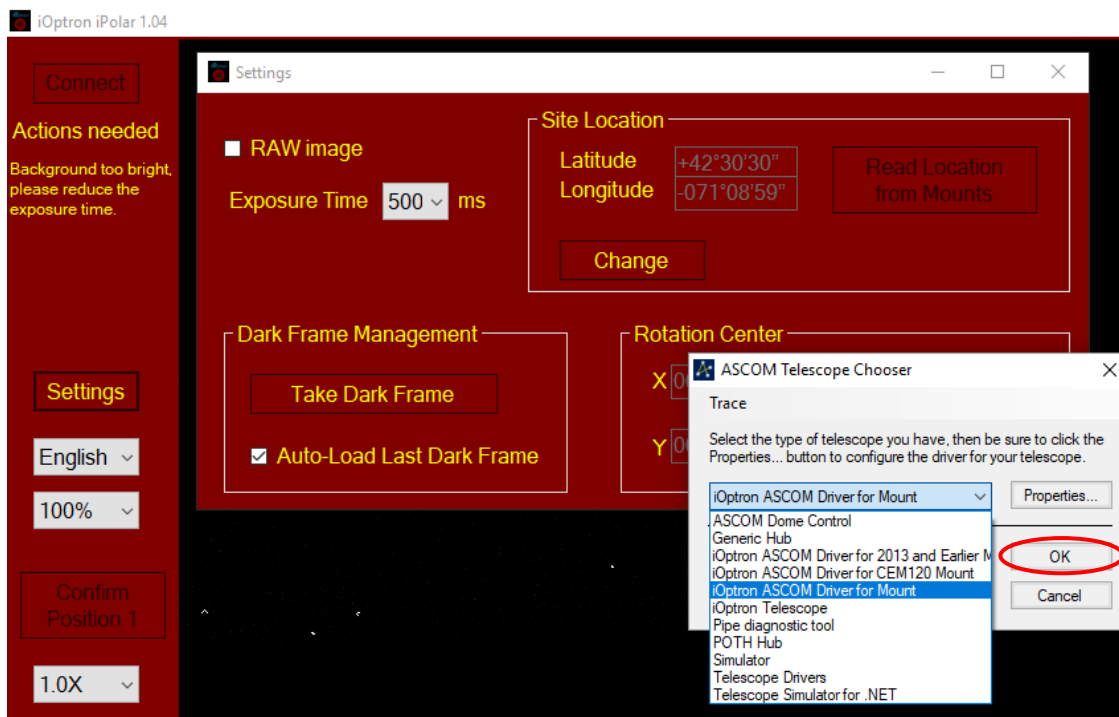

(3) Enter your latitude and longitude numbers

(4) Click **Confirm** to complete the location setting.
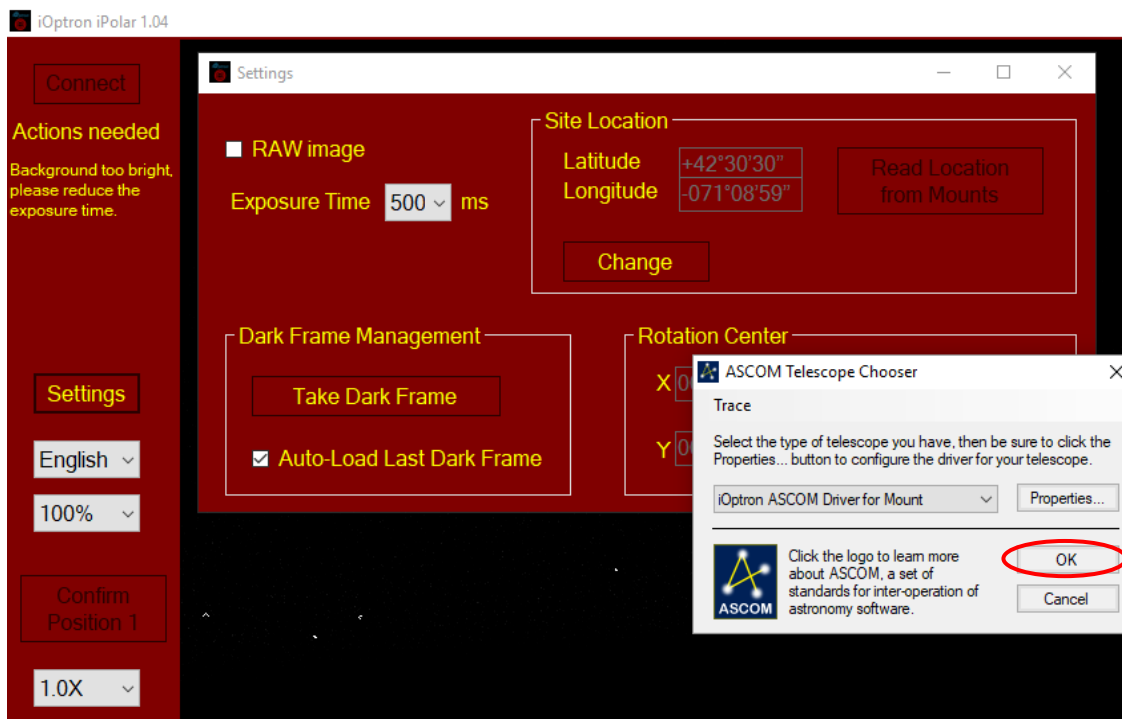
Read from an ASCOM Supported Mount

(1) Click on **Settings**
(2) Click on **Read Location from Mounts**

(3) An ASCOM Telescope Chooser window will occur, if the mount is ASCOM supported and connected to the computer. Select correct mount ASCOM driver and click OK.

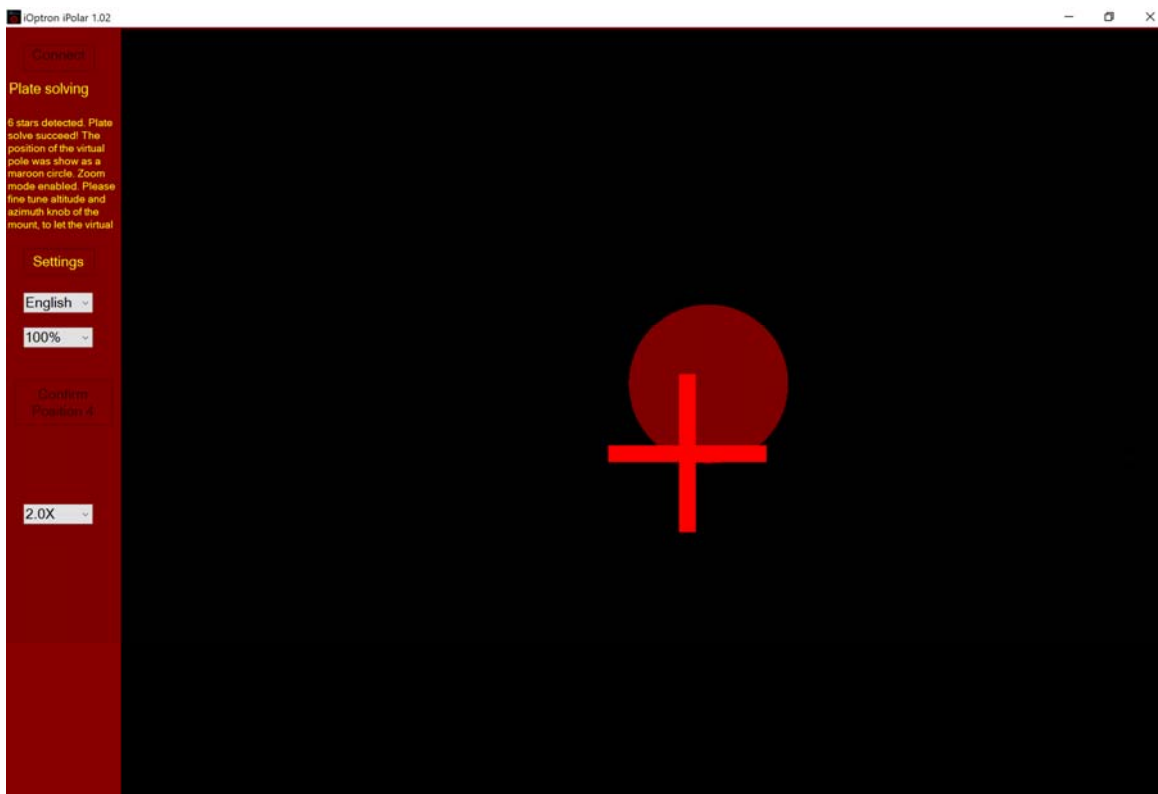(4) Click **OK** to complete the location setting.

Step 4. Plate Solving and Polar Alignment

If the iPolar EPS has been calibrated (see **Section 3** for calibration), there will be a bright red cross on the screen, which is the polar scope/mount RA axis rotating center. The alignment software will perform plate solving near the pole star area. There is no need to see the pole star, nor a crystal clear night sky.
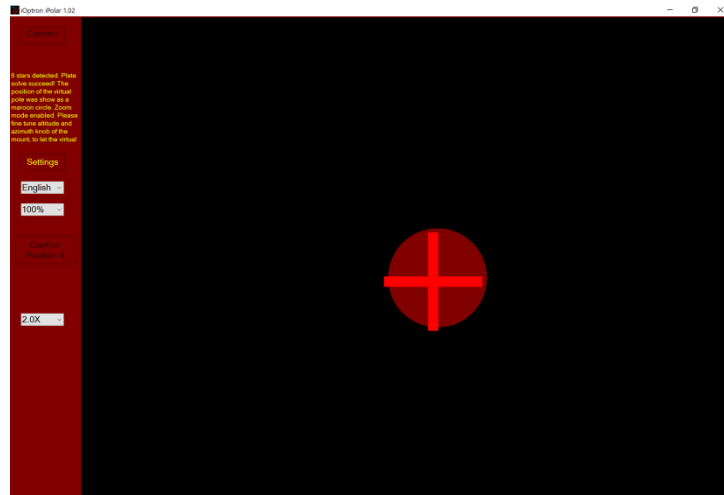
When the camera can see more than 4 stars, it will take the images, enhance the star and darken the background, remove the noise and plate solving the area. It will display the pole with a dark read dot.

Adjust the altitude and azimuth screws to move the read dot towards read cross. The image will be enlarged when they are moving close.

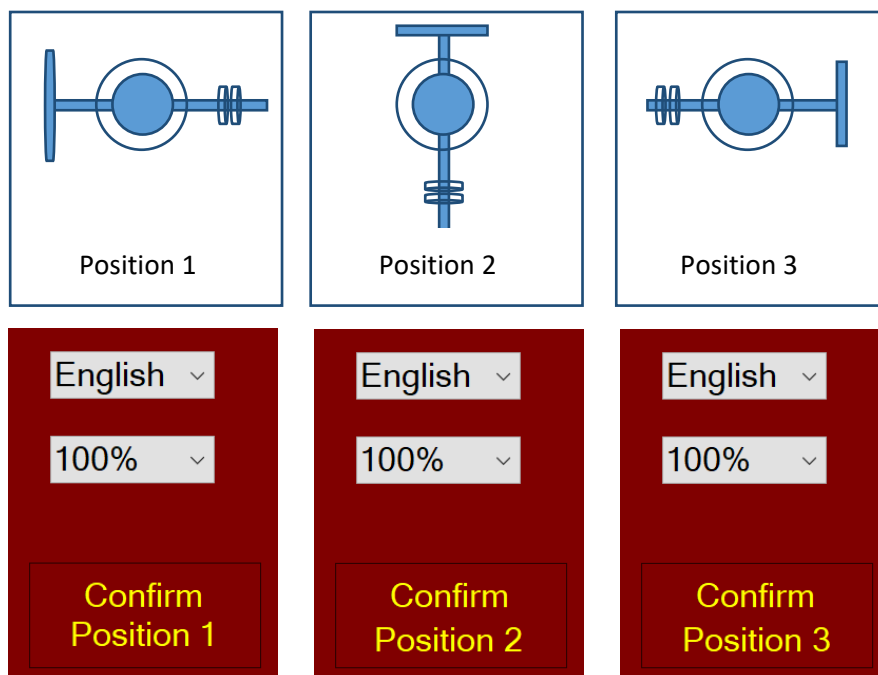When read dot fully covers red cross, the pole alignment is done.

3. iPolar Calibration

If do not see the red cross on the screen, the iPolar EPS has not been calibrated. Calibration is only need after iPolar is installed or any mechanical adjustment has been done on iPolar.

iPolar Rotating With Mount RA Axis

For most EQ mounts, the iPolar EPS can be rotated with the RA axis. The rotating center of the EPS can be calibrated via the flowing three positions, with on screen assistance.

Rotate the RA axis of the mount roughly to the following three positions. Click on **Confirm Position 1**, **Confirm Position 2** and **Confirm Position 3**, respectively, to complete the calibration.

iPolar Not Rotating With Mount RA Axis

For those mounts that the polar scope does not rotate with the RA axis, such as SkyTracker and SkyTracker Pro, the rotating center can be manual entered.

(1) Click on **Settings**
(2) Click on Input **Rotation Center**
(3) Enter **0480** in X and **0640** in Y
(4) Click **Confirm**. You should see the red cross on the screen.