

## Operation

At the start of the night:

Refer to the top line of the BTO Monitor and Control Window. Track should be “On”, Servo should be “On”, Laser should be “589”, Trigger should be “Laser”, Status should be “Ready” and Shutter should be “Closed”. All three quad cells should be enabled, with High-Speed on Q3. M1, M2, M3, Polarization, M2 Rotation, and Trolley should all report “Tracking”. The trigger rate should be in the neighborhood of 350 Hz. Offsets should be “Off”. Telescope HA and Dec should be reading “0.000” and “33.356”, respectively. If they say “No Data”, either request the AO Operator to connect TAO to the BTO, or set HA/Dec to “TCS”. 589 Power should be set to “High”.

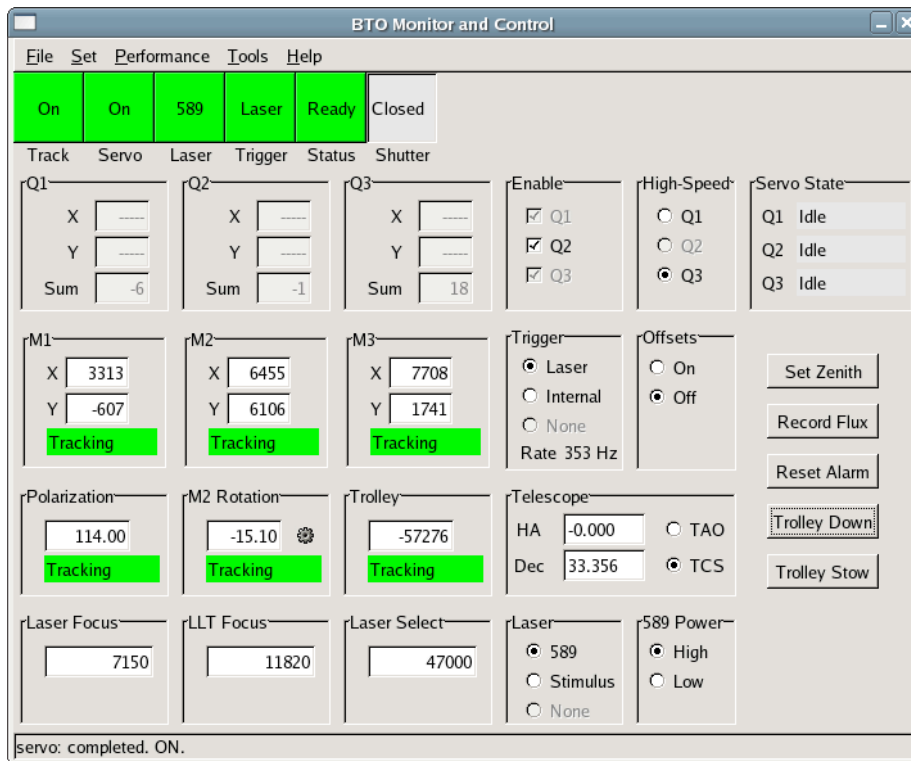


Figure 1: BTO Monitor and Control

Slew to the target. Open the shutter. BTO should lock on the yellow beam. If not, the alarm will go off. Proceed to the Troubleshooting Section.

While the telescope is observing targets, it will not be necessary to enter any commands. If the shutter closes, the BTO software will automatically update the mirror positions such that the servo should lock upon reopening the shutter. If any problems do occur, refer to the Troubleshooting section.

## **Shutdown**

At the end of the night, turn Track “Off”, Servo “Off”, Laser to “Stim” and Trigger to “Internal”. Then press the “Trolley Stow” button to move the trolley to its stow position.

## **Troubleshooting**

### **BTO Will Not Lock**

With both track and servo on, switch to the stimulus laser. It should lock with high-speed on Q3. Set the Zenith positions here. Then switch back to the 589 laser. Try to open the shutter again. If it fails again, then there is a problem with the red-yellow alignment in Coudé and someone will need to go in there to fix it.