

## Palomar Adaptive Optics Test Plan

Title	Abbreviated BTO checkout
Version	1.0
Date released	8/26/07
Lead	A. Bouchez
Time requested	15 min.
Required conditions	Dome closed

### Purpose

Use only on later nights of an observing run, when no major changes have been made to the laser or BTO.

1. Verify BTO alignment and functionality.
2. Test Q3 safety interlock.

### Test procedure

Personnel required: BTO operator, safety officer.

#### Setup:

1. Dome closed.
2. LLT primary mirror cover removed and LLT ready for high power laser (visually check diagnostics bench, cables).
3. 589nm laser at high power (>5W), checked for obstructions (power meter, etc.)
4. Stimulus laser powered on.
5. Safety interlock system tested, all zones active.
6. Remove Coude block.
7. Arm alarm.

#### Verify BTO alignment and functionality

8. Lock BTO servo on the stimulus laser:
  - 8.1. Set Laser to "Stimulus" in BTO GUI.
  - 8.2. Set all quad cells enabled and High-Speed to Q3.
  - 8.3. "Track On".
  - 8.4. Wait for "Track: completed." message in message window.
  - 8.5. "Servo On".
  - 8.6. Verify BTO servo locked with high-speed on Q3.
9. Under File menu, choose "Set Zenith and Save DEFAULT".
10. Set laser to 589nm.
11. Set trigger to "Laser".
12. Open the laser shutter.
13. If Q3 interlock closes laser shutter...
  - 13.1. Reset BTO alarm, try again (twice).
  - 13.2. Give up and follow full BTO alignment procedure starting at step 11.
14. Record Flux in BTO GUI.
15. "Set Zenith and Save DEFAULT".
16. Shutter laser

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Test Q3 interlock

17. Disarm alarm and install Coude block.
18. Arm alarm system.
19. Test-fire laser to demonstrate BTO interlock functionality.
20. Reset alarm on BTO.

**Results** (use one column per night)