

Palomar Adaptive Optics Test Plan

Title	BTO afternoon tests
Date	6/12/06
Lead	A. Bouchez
Time requested	4:00pm to 6:30pm
Required conditions	N/A

Purpose

Afternoon test and optimization of BTO performance with the 589nm laser, and demonstration of off-zenith laser projection.

Previous analysis

See http://www.oir.caltech.edu/twiki_oir/bin/view.cgi/Palomar/PalmLGS/BtO

Test procedure

1. Test safety system.
2. Arm safety system with zone 8 jumpered (no dome interlock).
3. Unlock and open Coude port. HP and AB to prime focus with filters.
4. Test LLT focus mechanism.
5. Project the 660nm laser. Adjust M4 and Q3 b-s to put light on Q3. Verify that signal levels are acceptable.
6. Demo low- and high-speed servo loop on Q3.
7. Set Q3 safety system threshold to just above Q3 660nm signal level.
8. Reinsert Coude port.
9. Project 589nm laser in Coude lab. Adjust beam through Coude BTO optics if necessary.
10. Close laser shutter
11. Open Coude port. Perform final safety checks.
12. Project 589nm laser in dome.
13. Close servo loops on all quad cells.
14. Verify signal levels on quad cells. If necessary, modify filters in front of Q1 (currently RG610) and Q3 (currently RG630), or 1/2-wave plate zeropoint.
15. Optimize and test Q3 safety system threshold level.
 - 15.1. Set new threshold if needed (10% above 660nm level)
 - 15.2. Shutter laser
 - 15.3. Offset M2y by 200 counts.
 - 15.4. Open shutter - verify that Q3 safety interlock triggers.
16. Test servo loops on 589nm beam, and tune gains to optimize performance.
17. Measure BTO transmission to LLT.
18. Shutter laser, prepare to move telescope.
19. Demonstrate off-zenith laser projection at [0h, 20dec], [+1h, 20dec], [+2h, 0dec]
 - 19.1. Slew to Dec location on meridian.
 - 19.2. Close servo loop on 660nm laser.
 - 19.3. Slew to final position.
 - 19.4. Open 589nm laser shutter.

19.5. Demonstate Q3 interlock operation as above.

Results and conclusions