

Caltech Optical Observatories / NASA Jet Propulsion Laboratory
Palomar Adaptive Optics

Palomar LGSAO Engineering Summary 01/07/07 UT

Night log:

1715 Opening dome. Conditions clear, calm.
1735 JH beginning AO checkout procedure. Ran into problems with
AO crashes, probably due to a known TCS bug.
1815 Resuming AO checkout.
1816 Filed laser status report with US-STRATCOM.
1830 Completed AO checkout. Seeing ~0.75" in K, but Strehl only
~35%.
1830 Sending spotters out for zenith propagation.
1845 Found apparent electronics problem with laser mode lock
control. Trouble-shooting.
1900 Acquiring bright NGS to check performance while working on
laser.
1930 Sending spotters out for zenith propagation.
1940 Propagating at zenith.
1950 Laser came in ~3' to NE of telescope boresight. Sending
team to prime focus to adjust boresight.
2010 Boresighting LLT:
1/2 turn inward of NW bolt (moves telescope SE).
1/2 turn inward of S bolt (moves telescope N).
2015 Antonin drops 3/8" standard wrench into gap between LLT
pedestal and prime focus cage floor.
2025 Mike D. and Steve K. called out for help.
2200 Wrench retrieved from under LLT.
2215 Testing BTO alignment in dome. Alignment good.
2225 Opening dome for zenith propagation. Laser power is 4.5W.
2230 Laser still 100" to W of boresight. Sending team to prime
focus for further adjustments.
1/8+1/16 turn inward of NE bolt.
1/8+1/16 turn outward of NW bolt.
2315 Boresighting team returned.
2324 Focusing laser LLT and Acq.
Acq_z: best = 12567, FWHM=24.3 -> 4.0"
LLT focus: best = 11750, FWHM=27.8 -> 4.5"
Laser_foc: some indications that it was maximum at 3000 &
9000, but leaving focus at 6000 (circular beam at LLT).
2345 Best images, with V filter installed.
laser5, laser6, 10s integration.
2358 Moving to Landolt 98-724, V=11.12 for photometric calib.
landolt98_724_1, landolt98_724_2, FWHM=22pix, 10s.
2412 Moving to SAO60907 for focus & seeing measurement.
2422 Seeing 1.43" in K, 1.91" in V.
0022 Moving to first LGS target: 2487-0706-1 (12 deg E of Z)
0050 HOWFS getting ~120 cts at 50 Hz.
0100 After opening iris on BTO coude bench... now seeing ~400 cts
at 50 Hz.
0112 Adjusted delay gen: final delay = 52400.

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0135 Seeing very large power fluctuations in LGS (x4 over ~3
minutes). Investigating.
0142 Laser 4.5W, frequency lock looks fine.
0145 Seeing is still 1.4" in K; less than 100cts at 50Hz, highly
variable
0200 Repeatedly measured seeing and whined about poor conditions.
0330 Called night for laser.
0345 Begin LOWFS flexure test.
0455 Completed LOWFS flexure test.
0500 Seeing still >2". Calling night.