Palomar LGSAO Engineering Summary 04/26/07 UT

Afternoon:
- Replaced original 1.06 um laser diodes, changed out power supply, and realigned laser. Power 4.2W and stable.

Night log:
1855 Opening dome for sky flats.
1930 Starting AO checkout.
1940 Strehl = 52%, seeing =0.75" at K (1.04" at V)
1945 Test plan complete. Waiting for FAA permission to lase.
1955 Sending team to prime focus for LLT boresighting.
2025 Projecting laser at zenith.
2130 Total boresighting offset required: ~300" W, ~100"N.
2145 Cannot detect LGS. Bringing PF team back down.
2200 Switching to NGS backup program.
2330 Preparing to project laser at zenith. Laser 4.2W.
2335 Projecting at zenith. Laser shuttered repeatedly due to power drop-outs (to <25%)
2443 Acquisition complete.
0058 Moving to target 2.
0118 Acquisition complete.
0130 Diagnosed "curl-up" of mirror as DM integral gain being too high. I retrospect, the HOWFS background appears to have been bad (perhaps taken on a cloud?)
0150 Radar shutters laser due to low-altitude aircraft (~4000ft), missed by spotters.
0202 Observers performing spectroscopy of galaxy core.
0238 Passing clouds and deteriorating seeing.
0312 Moving to target 3
0335 Acquisition complete.
0340 Laser unstable: Occasional 80% power drop-outs, lasting ~1-3s. Renu investigating.
0435 Found that setting ho_min_subap_flux to just below "healthy" flux level greatly reduced DM residuals during power drop-outs. Effect on performance unknown.
0505 Shuttered laser for FAA compliance.
0535 Moving to zenith to install LLT primary cover and DM mask.