

## Palomar LGSAO Engineering Summary 05/26/2007 UT

### Afternoon:

~15:30 Laser 4.7W, stable.

16:00 Barriers installed and interlocks tested

17:25 start BTO alignment and verification. 5.3W

17:50 BTO alignment completed

### Evening:

20:00 Open dome

20:08 Start NGS checkout, Strehl 64%, K-band seeing w/TT locked=0.375",  
V=0.5"

20:18 Done with NGS checkout

20:25 Seeing has gotten worse – 0.93" in V (0.775" in K) 70% strehl

20:40 Sending out spotters; acq\_z 10275; llt\_focus 11890; laser\_focus 10000; llt  
70, -30

21:00 Propagating laser

21:00 LLT focus:

11890 – FWHM=20.3,17.3

11860 – FWHM=19.6,16.5

11920 – FWHM=19.6,19.0 ( 21,22)

11860 – FWHM=18,16 – 1180152239.fits

21:04 Completed Laser Acquisition

21:07 Going to 7<sup>th</sup> mag star near TT target

21:14 Going to TT target near 2MASS J14075361

21:15 Propagating laser

LLT: 113, 40

After locking - LLT: 108, 40

50Hz, 250cts

21:23 Shuttered

21:25 Propagating

LOWFS – 400cts at 500Hz

21:30 23% K-band Strehl (19-30)

21:35 LLT: 108, 33

Rotating cass ring – 260

Strange pattern in PSF (cross-shaped)

21:55 Propagating

22:00 Checking TT star again

Co\_zero and co\_default give similar results – cross-shaped PSF

Tuning

Term 4: -3 units

Term 5: 0  
Term 3: 1  
22:20 Back on science target  
Centroid offsets = co\_lgs (co\_lgs\_070526a)

22:40 Going to 7<sup>th</sup> mag star  
22:45 Lost WFS telemetry, restarting  
22:50 Back on star  
22:55 Going to science target

LLT: 121, -23  
23:05 Locked on science target  
23:55 Going to 7<sup>th</sup> mag star  
23:55 Lost WFS telemetry, restarting

00:01 Back on star  
00:06 Propagating laser  
LLT: 110, -15  
00:14 Locked on science target  
16.1 80cts at 50Hz  
HO 300-400cts at 50Hz

00:15 Shuttered  
00:16 Propagating  
00:45 Going to 7<sup>th</sup> mag star  
00:46 Lost WFS telemetry, restarting

When we switched modes, we still had telemetry. But, when we took a background, setting the log types failed, then we could not recover the WFS telemetry. The DM plots were also dead. We tried turning the camera off and on, but got the message, "Error starting camera".

00:50 Back on star  
00:55 Seeing 23pix open loop = 0.75" in V  
00:59 Shuttered

01:00 Propagating LLT 89,1  
01:05 BTO oscillating  
Switched to Q1 for a bit, then back to Q3 - OK

01:07 Locked on science target  
01:41 Going to 7<sup>th</sup> mag star  
01:43 Tried changing HOWFS to 500Hz before switching modes. Seems to have helped – telemetry is fine

01:52 Star was too close to propagation limit, going to new target  
01:52 Telemetry ok after going to 500Hz before mode switch  
LLT 54,3

02:07 Locked on science target  
02:30 Going to 7<sup>th</sup> mag star  
LLT 100, 68

02:50 Locked on science target

03:26 Going to 7<sup>th</sup> mag star

LLT 76, 31

03:30 Laser spot not visible, called Renu

03:45 Renu re-acquired Na lock. The lock had drifted.

04:00 Locked on science target

04:10 Lost TT lock during dither, twice

04:15 Successful 2" dithers by hand; maybe LOWFS was seeing light from nebula during 5" dither

04:25 Lost TT lock again – maybe need open loop dithers

04:35 Shuttered laser