Palomar Adaptive Optics Test Plan

Title	**NGS AO Checkout**
Version	3.1
Date released	4/2/2007
Lead	A. Bouchez
Time requested	20 minutes every LGS night. Start after 6º twilight.
Required conditions	N/A

Purpose

Verify acceptable performance of the NGS AO system for subsequent engineering tests, and measuring seeing, on-axis Strehl and isoplanatic angle.

Test procedure

1. Slew to a V=7 A star near zenith.
2. Verify that AO system is set up for NGS.
3. Have the Laser Operator call Space Command
4. Acquire the primary with the AO system with an initial frame rate of 1000Hz. Adjust the frame rate to get 100-200 cts/subap on the WFS.
5. Offset to sky and record a wavefront sensor sky.
6. Perform both coarse and fine WFS-DM registration.
7. Verify that `co_default2` is loaded and that focus offloading is on.
8. Close the TT and DM loops.
9. Create a flat map on the star.
    9.1. IDL> `ao_make_dm_flat_map,` *filename*
    9.2. Load the flat map when complete.
10. While waiting for the flat map, check signal levels on PHARO:
    10.1.   Initial setup: 25mas FOV, filter BrG, ND 1%, standard cross, 2s integration.
    10.2.   Adjust the exposure time and filter to get 10-15k peak counts.
11. Open TT and DM loops, offset to sky, and record a new WFS background.
12. While on sky, record 3 PHARO sky frames.
13. Offset back to star and close TT and DM loops.
14. Record 3 images with PHARO. Note the directory, frame numbers, and Strehl.
15. Open the DM loop only.
16. Record 1 image with PHARO, 30s integration. Note frame number and FWHM.
17. Record the telescope focus.

Results (use one column per night)

UT date			
Weather conditions			
PHARO directory			
Target name			
13. Sky frames			
15. Closed-loop frames			
15. Closed-loop Strehl			
17. Open-loop frame			
17. Open-loop FWHM			
18. Telescope focus			