

PALAO Experiment Plan

Experiment name: LOWFS performance

Experiment PI: A. Bouchez

Experiment date: 02/09/06 – 02/11/06

Estimated sky time: 3.0 hr

Required conditions: Photometric or nearly so.

Special requirements: none.

Brief description of problem or theory this experiment is addressing:

The purpose of this experiment is to estimate the tip-tilt and focus sensitivity of the LOWFS.

Step by step instructions for conducting the experiment:

1. Setup
 - 1.1. Slew to a 6-10" separation binary star near zenith. $V_1 < 9.0$, $V_2 < 10.0$ for first star.
 - 1.2. Acquire primary in NGS mode.
 - 1.3. Center LOWFS on secondary (using LOWFS centroid offset button on ACQVIEW).
2. Measurements.
 - 2.1. With both TT and DM closed on HOWFS, acquire high rate telemetry on both HOWFS and LOWFS. Take PHARO images and estimate PSF core width.
 - 2.2. Close TT on LOWFS, DM on HOWFS (dual NGS mode). Acquire high rate telemetry on both HOWFS and LOWFS. Take PHARO images and estimate PSF core width.

Target list

Washington Double Star catalogue, searched in Vizier with the following criteria:

09:00:00 < RA < 16:00:00

00:00:00 < dec < 60:00:00

6.0" < sep < 9.0 (all epochs)

MagA < 9.0

Full	<u>RAJ2000</u>	<u>DEJ2000</u>	<u>recno</u>	<u>RA2000</u>	<u>DE2000</u>	<u>Date1</u>	<u>Date2</u>	<u>Sep2</u>	<u>MagA</u>	<u>MagB</u>
	"h:m:s"	"d:m:s"		"h:m:s"	"d:m:s"	a	a	arcsec	mag	mag
1	09 07.4	+22 59	31492	09 07.4	+22 59	831	973	7.6	7.00	7.40
2	10 17.2	+23 06	34410	10 17.2	+23 06	851	972	7.6	5.80	11.40
3	10 54.5	+20 46	36038	10 54.5	+20 46	843	962	8.8	8.40	11.90
4	10 55.6	+24 45	36078	10 55.6	+24 45	830	987	6.5	4.50	6.30
5	11 18.5	+33 06	36976	11 18.5	+33 06	830	973	7.3	3.48	10.10
6	11 52.7	+56 47	38161	11 52.7	+56 47	913	991	6.3	8.80	12.80
7	12 17.5	+28 56	39044	12 17.5	+28 56	848	958	8.6	5.70	10.20
8	13 07.3	+00 35	40747	13 07.3	+00 35	830	992	7.0	7.60	8.10
9	13 54.0	+32 49	42452	13 54.0	+32 49	831	963	6.6	8.90	9.10
10	14 23.4	+08 27	43530	14 23.4	+08 27	822	989	6.2	5.14	6.86
11	14 24.1	+11 15	43563	14 24.1	+11 15	832	946	9.3	7.40	7.50
12	14 44.8	+07 42	44260	14 44.8	+07 42	828	983	6.7	8.80	9.30
13	14 52.5	+18 44	44533	14 52.5	+18 44	878	987	8.1	8.00	12.00
14	15 04.1	+05 30	44945	15 04.1	+05 30	829	992	10.0	7.13	7.36
15	15 09.1	+05 12	45095	15 09.1	+05 12	829	967	7.0	8.90	10.70
16	15 17.1	+41 17	45409	15 17.1	+41 17	901	984	8.6	8.40	12.40
17	15 39.4	+36 38	46315	15 39.4	+36 38	822	978	6.3	5.10	6.00

Analysis and conclusions from this experiment: