

Palomar Adaptive Optics Test Plan

Title	PalmAO / Pharo Throughput and Zero Point Analysis
Version	1.0
Date released	04/07/2008
Lead	R. Burruss
Time requested	30 minutes
Required conditions	Clear skies

Purpose

Determine the Zero Point of the PalAO/Pharo instrument and compare it to values obtained before the latest PalAO realignment and recoating of optics. Previous Zero Point values for Pharo are 24.7 in Ksh and 24.8 in J-band. (Zero Point = magnitude that produces 1 e⁻/sec)

Test procedure

1. Slew to an appropriate standard star. Suitable Near-IR standards for Pharo are listed in *Persson et al, AJ 116:2475-2488, 1998* and are cataloged in the Palomar TCS as STD 9101 – STD 9188.
2. At minimum, 3 standard stars are needed. One for airmass near 1.0, one for airmass at 1.5, and one for airmass at 2.0.
3. Acquire the star with PalAO as normal, lock the TTM loop, but DO NOT lock the DM loop
4. Set Pharo to 25 mas mode and StdCross. Do not use an ND filter.
5. Take 3 images in each broadband filter (J, H, and Ksh) with exposure times that produce ~ 20,000 to 30,000 DN peak counts
6. Unlock the TTM loop, move off the star to take 3 background images with each filter
7. Keep a log that lists the image file name, peak counts, filter, Pharo settings, and airmass

Results and conclusions