2/9/2006

PALAO Experiment Plan

Experiment name: SSM field of regard
Experiment PI: A. Bouchez
Experiment date: 02/09/06 – 02/11/06
Estimated sky time: 1 hr
Required conditions: Any.
Special requirements: None.

Brief description of problem or theory this experiment is addressing:
The field of regard of the SSMs is not well known, and needed to fully define the performance of the PALAO system for our users. Rick Burrus measured the range in the 4 cardinal directions, and derived the limits shown in Figure 1. I am not certain if the SSM range is limited at these positions by motor limits, or vignetting of the field or pupil.

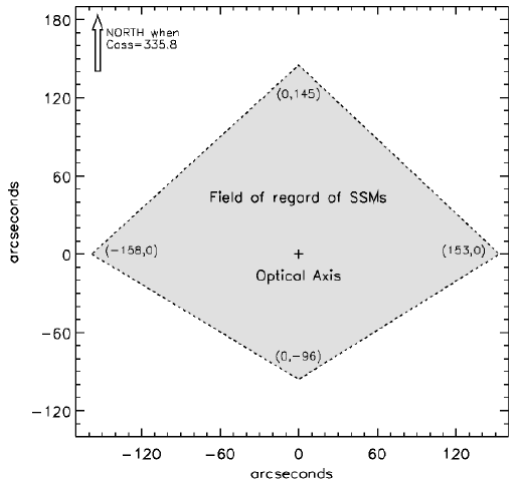

Fig. 1: Previous measurements of SSM limits (from R. Burruss, 01/29/06)

Step by step instructions for conducting the experiment:

1. Setup
   - 1.1. Acquire a V=8 star near the zenith with the HOWFS. Close the HO and TT loops.
   - 1.2. Set up PHARO in 40" field with the K filter, 5s integrations, continuous acquisition (the star will be massively saturated, but the goal is to see the sky level clearly).
2. Measurements
   - 2.1. Offset the SSMs along a cardinal direction in 5" steps until one of the following conditions occurs:
     - The one of the SSM motors hits a limit
     - The pupil on the HOWFS appears >5% vignetted.
     - The image of the sky on PHARO becomes becomes >10% vignetted.
   - 2.2. Record the SSM image plane position, and note the failure mode.
   - 2.3. Return to the optical axis, and repeat in 3 other cardinal directions.
   - 2.4. Repeat in the 4 diagonal directions.
   - 2.5. Map out any obvious obstructions extending into the SSM field of regard.

SSM Field of Regard Log Sheet

UT Date:_____. Star:_____. Sky Conditions:_____.

ID	X (“)	Y (“)	Failure mode
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

Sketch of SSM Field of Regard shape: