

Questions and Answers 10/13/10

Question #1: The operation of the active primary mirror support system assumes wavefront measurements. We assume only low order modes need to be sampled. Is it possible to provide values for the following parameters?

- Frequency of wavefront measurements
- Number of modes that are measured
- Resolution and accuracy of the wavefront measurements

Answer: We do indeed use wavefront measurements for the M1 figure control. We effectively model only the lowest modes (up to about Z10, trefoil, in Noll's accounting of Zernike coefficients) of the wavefront error. Our figure control system is calibrated approximately monthly. We run an open loop look-up table during nightly operations. The resolution and accuracy of our system is in terms of the forces (Newtons) applied to each of the differential pistons. We currently have a resolution of ~ 0.001 N and an accuracy of 0.15 N. (10/13/10)