

## Phase Retrieval Camera for Testing NGST Optics

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The NGST Phase Retrieval Camera (PRC) is a portable wavefront sensor useful for optical testing in high-vibration environments. The PRC uses focus-diverse phase retrieval to measure the wavefront propagating from the optical component or system under test. Phase retrieval from focal plane images is less sensitive to jitter than standard pupil plane interferometric measurements; the PRC's performance is further enhanced by using a high-speed shutter to freeze out seeing and jitter along with a reference camera to maintain the correct boresight in defocused images. The PRC hardware was developed using components similar to those in NGST's Wavefront Control Testbed (WCT), while the PRC software was derived from the testbed's extensive software infrastructure. Primary applications of the PRC are testing and experimenting with NGST technology demonstrator mirrors, along with exploring other wavefront sensing and control problems not easily studied using WCT. An overview of the hardware and testing results will be presented.