

Abstract Submitted  
for the FWS15 Meeting of  
The American Physical Society

**Astrometric Calibration of the Gemini Planet Imager** DEBBY TRAN, QUINN KONOPACKY, UC San Diego, GPIES TEAM — The Gemini Planet Imager (GPI), housed on the 8-meter Gemini South telescope in Chile, is a new instrument designed to detect Jupiter-like extrasolar planets by direct imaging. It relies on adaptive optics to correct the effects of atmospheric turbulence, along with an advanced coronagraph and calibration system. One of the scientific goals of GPI is to measure the orbital properties of the planets it discovers. Because these orbits have long periods, precise measurements of the relative position between the star and the planet (relative astrometry) is required. In this poster, I will present the astrometric calibration of GPI. We constrain the plate scale and orientation of the camera by observing different binary star systems with both GPI and another well-calibrated instrument, NIRC2, at the Keck telescope in Hawaii. We measure their separations with both instruments and use that information to calibrate the plate scale. By taking these calibration measurements over the course of one year, we have measured the plate scale to 0.05% and shown that it is stable across multiple epochs. I will also discuss our effort to correct for optical distortion using pinhole masks in the laboratory.

Debby Tran  
UC San Diego

Date submitted: 09 Oct 2015

Electronic form version 1.4