Contribution ID: **38**   Type: **Poster presentation (90 second oral summary, 90 minute poster session & free presentation times over 3x 40m coffee breaks)**

Focal plane figure - knowledge and control for Rubin Observatory's LSST Camera

Tuesday, 12 March 2024 14:30 (1h 30m)

Rubin Observatory has a unique optical beam geometry. The large collecting area of the primary mirror, combined with atmospheric seeing-limited imaging across the large (9.6 $\deg^2$) field-of-view, enables the survey mission.

The combination drives a fast (F/1.2) beam geometry with unprecedented sensitivity to defocus driven, point spread function blur and shape transfer, even under operation (closed loop, active optic compensation).

The LSST focal plane is constructed out of 205 individual sensor surfaces under passive alignment and operates at -100°C within the cryostat vacuum. In this presentation we describe the Manufacturing, Integration and Testing effort that went toward assembly of the ultimate focal plane (achieving 4μm rms deviation from flat), as well as the detailed, underlying as-built characterization knowledge under operating conditions. We anticipate that these data will enable improved point spread function estimation/extrapolation in instances where its contribution may be ambiguous or inadequately quantified.

contribution subject matter

point spread function fidelity

Keywords for your contribution subject matter (this will assist SOC in accurately characterizing your contribution)

focal plane geometry; point spread function; weak lensing; shape transfer

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