HL Tau (Age = 5 Myr, Distance = 140.0 pc) Ideal -- F187N  $(r^2)$ Ideal -- F200W  $(r^2)$ Ideal -- F405N  $(r^2)$ Ideal -- F410M  $(r^2)$ 160 12 0.4 10 140 0.5 0.5 0.5 10 0.5 120 8 0.3 100 0.0 0.0 0.0 0.0 0.2 -0.5-0.5-0.540 0.1 20 0.5  $1.0 \blacksquare 0.0$ 0.5 0.5 Roll Sub ( $\Delta$ WFE = 1 nm) -0.351.0 10 0.4 0.30 3.5 0.5 0.5 0.5 0.5 0.25 3.0 0.3 0.20 0.0 0.0 0.0 0.0 0.2 0.15 1.5 -0.5-0.50.10 - 0.5-0.51.0 0.1 0.05 0.5  $-1.0_{-1.0}$ -0.50.0 0.5  $1.0 \blacksquare 0.0$ -0.50.5  $1.0 \blacksquare 0$ -0.50.0 0.5  $1.0 \blacksquare 0.00$ -0.50.0 0.5

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