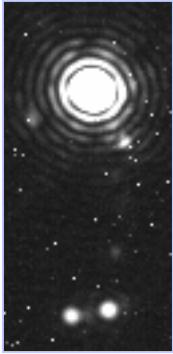
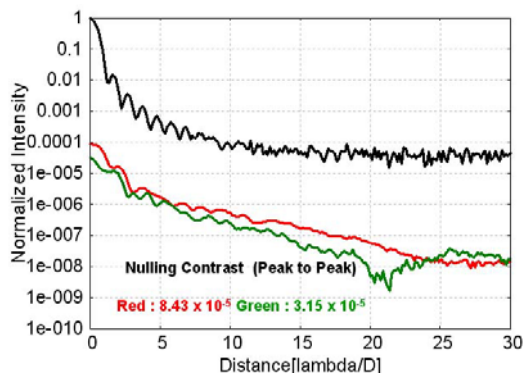


Achromatic Interfero-Coronagraph with common-path: images from demonstrator and perspectives

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A three-dimensional common-path interferometer is proposed, which can achromatically null out an on-axis source while maintaining the detectability of an off-axis source. A geometric phase in the three-dimensional interferometer introduces an achromatic π -phase shift to the light from the on-axis source, such that destructive interference nulls out the axial light at one of the ports of the interferometer. Light from the off-axis source, which is exempt from destructive interference, comes out



from both ports with equal intensity. The common-path scheme makes the system highly immune to environmental disturbances. In the described experiment, a 10^{-6} peak-to-peak nulling contrast was obtained at $1 \cdot \lambda/D$ distance. A proof for achromaticity and several perspectives to enhance general AIC nulling performances will be discussed.