Recovering a 100-times-fainter second-ary star in the spectroscopic binary eta Peg, at a separation of only one-third of the primary star’s diffraction beamwidth, and a simultaneous measurement of the primary star’s diameter, which would usually have required long-baseline interferometry.

We believe that our proof-of-concept demonstration that nulling interferometry can reach several times closer to stars than coronagraphy, though performed on a compact-binary star, is also promising for future exoplanet observations. Realistic null-depth and sensitivity improvements on larger telescopes could enable imaging and spectroscopy of bright exoplanets (such as hot Jupiters and young, self-luminous exoplanets) at the small separations currently accessible only to radial-velocity and transit observations.