Erratum: Longitudinal Optical Binding of High Optical Contrast Microdroplets in Air [Phys. Rev. Lett. 96, 143902 (2006)]

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We focus on a partial misinterpretation of experimental observations reported in a previous article on optical binding between oil droplets in a counterpropagating beam trap [1]. Improved observations and data analysis strongly indicate that what we previously interpreted as longitudinally bound *three*-droplet systems were in fact composed of only *two* optically bound droplets, while observations previously interpreted as trapped doublets were in reality single droplets. Although optically bound three-droplet systems in air are still observed, they are less frequent and less resistant than we initially reported. Furthermore, the formation of stable optically bound systems in air apparently requires slightly larger droplets than what we previously indicated.

Direct imaging shows that the trapping light scattered in the 90° direction produces two sharp bright dots at the droplet's azimuths (originally interpreted as separate droplets) even for small droplets (see Fig. 1). Spectroscopic measurements were also performed on elastically scattered radiation from three different wide spectra light-emitting diodes impinging on trapped doublets and singlets along the trapping beam axis. The scattering resonances could be fitted with good accuracy by Mie scattering theory, thus allowing precise determinations of the droplet radii.

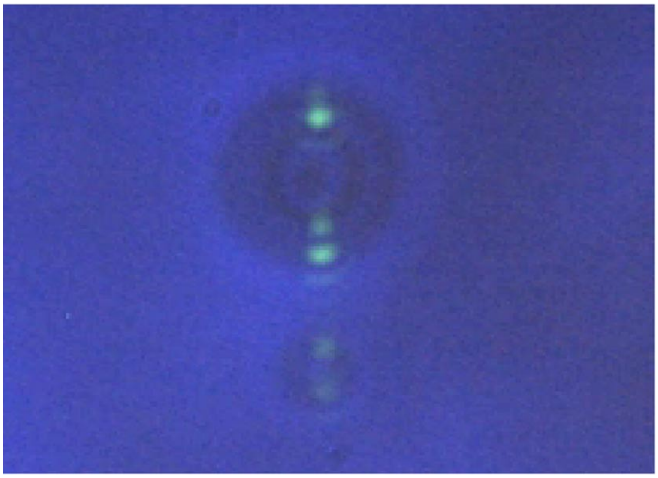

FIG. 1 (color online). Direct imaging (blue light) of a trapped doublet (droplet diameters, respectively, 3.0 and 1.5 μm). The bright (green) dots at the azimuths of the droplets are scattered light originating from the vertically oriented (counterpropagating) trapping beams.

[1] M. Guillon, O. Moine, and B. Stout, Phys. Rev. Lett. **96**, 143902 (2006).

