

# Probing the faintest galaxy population at the epoch of reionization with gravitational lensing

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**Abstract.** Ultra-deep observations of blank fields with the Hubble Space Telescope have made important inroads in characterizing galaxy populations at redshift  $z = 6 - 10$ . Gravitational lensing by massive galaxy clusters offers a new route to identify the faintest sources at the epoch of reionization. In particular, thanks to the Hubble Frontier Fields program, we robustly pushed the detection limit down to  $M_{AB} = -15$  mag at  $z \sim 6$ . I will present the latest results based on the complete dataset of the HFF clusters and parallel fields, and their implications on the ability of galaxies to reionize the Universe. I will also discuss the results of a comprehensive end-to-end modeling effort towards constraining the systematic uncertainties of the lens models, which are currently the last hurdle before extending the UV LF to fainter luminosities. Finally, I will discuss the great discoveries awaiting combination of such cosmic lenses with the upcoming James Webb Space Telescope and the exciting opportunity to probe the turnover of the UV LF, hence the limit of the star formation process at those early epochs.

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