HST/COS Observations of O(He) Stars

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The four known O(He) stars are the only amongst the hottest post-AGB stars ($T_{\rm eff}$ > 100,000 K) whose atmospheres are composed of almost pure helium. This chemistry markedly differs from that of the hydrogen-deficient post-AGB evolutionary sequence with objects that have carbon-dominated atmospheres (namely PG 1159 stars and Wolf-Rayet type central stars). While PG 1159 and Wolf-Rayet stars are the result of a (very) late helium-shell flash, this scenario cannot explain the O(He) stars. Instead, they are possibly double-degenerate mergers. We speculate that the four O(He) stars represent evolved RCrB stars, which also have helium-dominated atmospheres.

We present UV spectroscopy of the O(He) stars based on recently performed HST/COS observations.