

DISCOVERY OF C/O-RICH HOT SUBDWARFS: THE WD-MERGER ROUTE TO PG1159 STARS

Klaus Werner¹, Nicole Reindl², Stephan Geier², Max Pritzkeleit²

¹*Universität Tübingen, Germany*, ²*Universität Potsdam, Germany*

We announce the discovery of two hydrogen-deficient sdO stars that exhibit unusually strong carbon and oxygen lines. Our NLTE analysis reveals astonishingly high abundances of C ($\approx 20\%$, by mass) and O ($\approx 20\%$) and that the two stars are located close to the helium main sequence. Both objects establish a new spectroscopic class of hot hydrogen-deficient subdwarfs (CO-sdO) and can be identified as the remnants of a helium-core white dwarf that accreted matter of a merging low-mass CO-core white dwarf. We conclude that the CO-sdOs represent an alternative evolutionary channel creating PG1159 stars besides the evolution of single stars that experience a late helium-shell flash.