

ON THE SOURCE OF METALS IN SOME HOT WHITE DWARF PHOTOSPHERES

Matt Burleigh¹, Nathan Dickinson¹, Paul Steele^{1,2}, Jay Farihi¹, Martin Barstow¹, Nigel Bannister¹, Boris Gaensicke³, Francesca Faedi^{1,4}

¹ *University of Leicester, UK;* ² *MPE, Germany;* ³ *University of Warwick, UK;* ⁴ *Queen's University, Belfast, UK.*

We have known for two decades that many hot ($> 20,000\text{K}$), H-rich white dwarfs have photospheres polluted by heavy elements. Above $\sim 50,000\text{K}$, their presence can be explained by radiative levitation of primordial material, but this mechanism appears to work less effectively below that temperature. Abundance patterns can also differ enormously for stars between $20 - 40,000\text{K}$. The discovery of dust and gas disks around cooler DAZ stars suggests that perhaps some hotter white dwarfs are also accreting material from disrupted asteroids. We present a search for dust disks around metal-rich hot DA white dwarfs with Spitzer, an optical search for gas disks around the same stars, and discuss the evidence to support the hypothesis that some individual hot white dwarfs are accreting terrestrial material.