

# A WHITE DWARF ACCRETING PLANETARY MATERIAL DETERMINED FROM X-RAY OBSERVATIONS

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We have recently made the first direct detection of planetary material accreting onto a white dwarf using X-ray observations. This discovery confirms G29–38 - the prototype of all metal-polluted white dwarfs with detected debris disks - as a significant source of soft X-rays. Our detection relied upon a 106 ks exposure with the *Chandra X-ray Observatory* and provides the first direct evidence of ongoing accretion of planetary material onto a white dwarf. From the measured low-energy X-ray emission and modelled X-ray luminosity, we provide the first independent constraint on the accretion rate at such a system, finding an instantaneous accretion rate consistent with modelling of observed photospheric abundances. We measure a relatively low plasma temperature of  $kT \approx 0.5$  keV, corroborating the predicted bombardment solution for white dwarfs accreting at low accretion rates. I will present this recent discovery and its implications for the study of evolved planetary systems, including the accretion rates and bulk elemental compositions.