Contributed Talk

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The giant-dwarf connection

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The Asymptotic Giant Branch (AGB) phase is one of the most complex and yet not fully understood phase in stellar evolution. Spectral analyses of hydrogen-deficient AGB descendants yield constraints on nuclear processes in that phase – a pre-requisite to understand AGB stellar evolution.

The DO-type white dwarf RE 0503−289 was discovered in the ROSAT all-sky EUV survey two decades ago. Analyses of extreme and far-ultraviolet spectra of RE 0503−289 allowed to identify many metal lines up to the trans-iron elements. Thus, RE 0503−289 may be a rosetta stone to understand AGB nucleosynthesis and the post-AGB stellar evolution. To investigate its uniqueness, we selected three stars close to RE 0503−289 in the $\log T_{\rm eff} - \log g$ plane. These are the PG 1159-type star PG 1707+427 and the two DO-type white dwarfs PG 0109+111 and WD 0111+002. We present a NLTE spectral analysis and discuss their evolution.