

THE ATMOSPHERIC PARAMETERS OF NEARBY WHITE DWARFS REVISITED

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We present improved atmospheric parameters of nearby white dwarfs lying within 20 pc of the Sun. The aim of the current study is to obtain the best statistical model of the least-biased sample of the white dwarf population. A homogeneous analysis of the local population is performed combining detailed spectroscopic and photometric analyses based on improved model atmosphere calculations for various spectral types including DA, DB, DQ, and DZ stars. The spectroscopic technique is applied to all stars in our sample for which optical spectra are available. Photometric energy distributions, when available, are also combined to trigonometric parallax measurements to derive effective temperatures, stellar radii, as well as atmospheric compositions. A revised catalog of white dwarfs in the solar neighborhood is presented. Effective temperature, surface gravity, and mass distributions are also discussed.