ORFEUS Observation of the Central Star of NGC 6543

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During the ORFEUS-SPAS (Orbiting Retrievable Far and Extreme Ultraviolet Spectrometer on the Shuttle Pallet Satellite) mission STS-51, flown in September 1993, we observed the central star of the planetary nebula NGC 6543 in the far ultraviolet (90 nm to 115 nm) wavelength region using the University of California, Berkeley spectrometer with a spectral resolution of 0.03 nm.

In addition to narrow absorption lines of atomic and molecular species (e.g. H I, C I, N I, O I, H_2) the spectrum shows strong P-Cygni-profiles of the S VI (93.3 nm, 94.4 nm), O VI (103.2 nm, 103.8 nm) and P V (111.8 nm, 112.8 nm) resonance doublets. The terminal wind velocities for the different ions are 1550 km/s for S VI, 1970 km/s for O VI and 1550 km/s for P V. The analysis of these three P-Cygni line doublets using the escape probability method yields as a mean value for the lower limit of the central star's mass loss rate $1.0 \cdot 10^{-8}\, M_{\odot}/\mathrm{yr}$.

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