

Contributed Talk

Splinter HotStars

SPECTRAL ANALYSIS OF THE HYBRID PG 1159-TYPE CENTRAL
STARS OF THE PLANETARY NEBULAE ABELL 43 AND NGC 7094

L. Löbbling

*Institute for Astronomy and Astrophysics, Kepler Center for Astro and Particle
Physics, Eberhard Karls University, Sand 1, 72076 Tübingen*

About a quarter of all asymptotic giant branch (AGB) stars lose their hydrogen rich envelope due to a reignition of the helium-burning shell in a final thermal pulse (FTP). Hybrid PG 1159 stars with a still detectable amount of hydrogen in the photosphere form if the FTP occurs at the tip of the AGB. We calculated non-local thermodynamic equilibrium model atmospheres using the Tübingen Model Atmosphere Package and compared them to recently obtained ultraviolet and optical spectra of the central stars of Abell 43 and NGC 7094. To prove the presumption that the previously detected iron deficiency could result from the conversion of iron into heavier elements via the s-process on the AGB, the opacities of the trans-iron elements zinc, gallium, germanium, krypton, zirconium, molybdenum, xenon, and barium, that became available recently, were included in the model calculations. Several computed lines could be used to determine upper abundance limits for six of them. We compared these to the predictions from stellar evolution models and to the determined values for other hot post-AGB stars to conclude on their evolution and to establish constraints for nucleosynthesis and mixing processes on the AGB.