

APPARENT MAGNITUDES OF PLANETARY NEBULAE NUCLEI

R.A. Shaw, J.B. Kaler
Astronomy Department, University of Illinois at Urbana-
Champaign, USA

B and V magnitudes for the central stars of a number of planetary nebulae are presented. The observations were obtained between 1971 and 1981 with the University of Illinois one-meter telescope at Prairie Observatory. The average magnitudes presented are accurate extractions of the stellar continuum flux from the total (stellar plus nebular) measured flux (see Kaler, 1976, *Astrophys. J.*, 210, 113).

The nebular continuum flux was calculated upon the best available values (and associated uncertainties) of the measured $H\beta$ flux, the electron temperature, electron density (from which we obtained the contribution from 2-quantum emission), the He^+/H^+ and He^{++}/H^+ ratios, and the logarithmic extinction at $H\beta$. The uncertainties in the above quantities were propagated through the entire calculation to provide a correct evaluation of the resulting uncertainty in the quoted magnitude. Finally, when the central star contributed only a minimal fraction of the continuum, we were able to set realistic upper limits to the magnitudes.

The method used here is the best available for the determination of B and V central star magnitudes, and is probably the only reliable method for compact planetaries. As a test case, the B and V magnitudes for the nucleus of NGC 7662, which contributes only $\approx 20\%$ of the total nebular continuum, agree well with those derived from the IUE data by Harrington et al. (1982, *M.N.R.A.S.*, 199, 517).

UBV-OBSERVATIONS OF VARIABLE PLANETARY NEBULAE

E.B. Kostyakova
Sternberg State Astronomical Institute, Moscow, USSR

The UBV- and spectral observations of several variable planetary nebulae were continued at the Crimean Station of Sternberg Astronomical Institute.