

NOTES FROM PACIFIC COAST OBSERVATORIES

A PLANETARY NEBULA IN THE GLOBULAR CLUSTER MESSIER 15

On a plate of the globular cluster Messier 15 taken at the Cassegrain focus of the 100-inch reflector on August 30, 1927, through the "Pulkowa ultra-violet" color filter, the star Küstner¹ No. 648, photographic mag. 13.78, appeared very bright as compared with the surrounding stars.

Two spectrograms with exposure times of 4 hours each taken on Eastman 40 plates on August 20 and 21, 1928, with spectrograph Cassegrain VI on the 100-inch reflector showed a continuous spectrum with relatively strong bright lines.

The continuous spectrum is O type; the bright lines, in order of their intensities, are N_1 , $H\beta$, $H\gamma$, N_2 , $H\delta$, $H\epsilon$, 4471, 4363, 3888 and 3868.

The star is therefore a bright planetary nebula with a relatively weak nucleus.

Measures of these plates by Humason show a radial velocity of -156 km/sec. Measures of radial velocity of the cluster from other stars are: Slipher, -95 ; Sanford, -93 ; and Adams, from a spectrogram by Pease, -180 ± 50 km/sec.

From the fact that the nebula lies close to the center of the cluster ($\alpha = +14''.82$, $\delta = +26''.08$, Küstner [See Plate 27*b*]) and that its radial velocity is of the same order as that of the other stars of the cluster, it is probable that the nebula belongs to the cluster.

It lies, however, not far from a group of small high-velocity planetaries mentioned by Wright² in his summary of the velocities of the bright line nebulae, and it is therefore possible that it is a straggling member of this group, distant from it about the diameter of the group.

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Mount Wilson Observatory,
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¹Friedrich Küstner, *Veröff. der Univ.-Sternwarte zu Bonn*. "Der Kugelförmige Sternhaufen Messier 15."

²W. H. Wright, *Publications of the Lick Observatory*, **13**, 182, Section 5.