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Deep Stromvil Photometry for Star Formation in the Head of the Pelican Nebula

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The North America and Pelican Nebulae, and specifically the dark cloud L935 contain regions of active star formation (Herbig, G. H. 1958, ApJ, 128,259). Previously we reported on Vatican telescope observations by Stromvil intermediate-band filters in a 12-arcmin field in the "Gulf of Mexico" region of L935. There we classify A, F, and G-type stars. However, the many faint K and M-type dwarf stars remain somewhat ambiguous in calibration and classification. But attaining reasonable progress, we turn to another part of L935 located near the Pelican head. This area includes the "bright rim" which is formed by dust and gas condensed by the light pressure of an unseen O-type star hidden behind the dense dark cloud. Straizys and Laugalys (2008 *Baltic Astronomy*, 17, 143) have identified this star to be one of the 2MASS objects with $A_v=23$ mag. A few concentrations of faint stars, $V \sim 13$ to 14 mag. are immersed in this dark region. Among these stars are a few known emission-line objects (T-Tauri or post T-Tauri stars). A half degree nearby are some photometric Vilnius standards we use to calibrate our new field. We call on 2MASS data for correlative information. Also the Stromvil photometry offers candidate stars for spectral observations.

The aim of this study in the Vilnius and Stromvil photometric systems is to classify stars down to $V = 18$ mag., to confirm the existence of the young star clusters, and to determine the distance of the cloud covering the suspected hidden ionizing star.