

THE INTEGRATED PHOTOMETRY OF GLOBULAR CLUSTERS
IN THE VILNIUS PHOTOMETRIC SYSTEM

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Thirty-three globular clusters of our Galaxy were observed with the filters of the Vilnius photometric system UPXYZVS with 3450, 3740, 4050, 4660, 5160, 5440, 6550 Å filters (Straižys 1977). For the classification of clusters in metallicities the reddening-free parameters Q_{UYV} , Q_{PYV} and Q_{XYV} can be used. In Figure 1 these Q parameters, having a range of variation of the order of 0.4, are plotted against metallicity values from Kukarkin (1974). The parameter Q_{PYZ} has an even larger range of variation (of the order of 0.6). For determination of color excesses of clusters every color index can be used if its intrinsic values for a given metallicity defined by quantities Q are known (Figure 2). Average color excesses determined from the diagrams Q_{UYV} , (Y-V)₀; Q_{PYV} , (Y-V)₀ and Q_{XYV} , (Y-V)₀ and transformed to E_{B-V} in Figure 3 are compared with color excesses from Kukarkin (1974). To summarize, the Vilnius system presents a number of metallicity sensitive, reddening-free parameters which can be used for [Fe/H] and color-excess determinations of globular clusters.

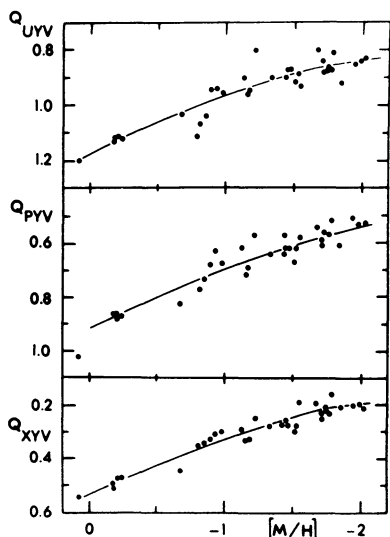


Figure 2.
 Q_{PYV} vs
(Y-V)₀.

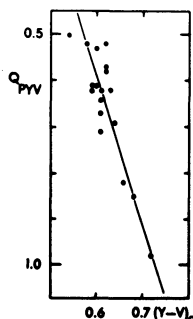


Figure 1. Reddening free Q parameters vs. metallicity, [M/H].

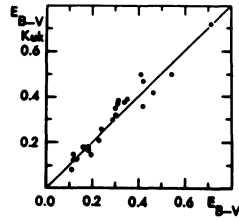


Figure 3. Color-excesses from Kukarkin (1974) vs. those from the Vilnius photometry.

REFERENCES

- Kukarkin, B.V.: 1974, "The Globular Star Clusters", Moscow.
Straizys, V.: 1977, "Multicolour Stellar Photometry", Vilnius.