FOUR-COLOUR SURVEY OF W-UMA-TYPE SYSTEMS

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Abstract. Four-colour photometry of 24 W UMa-type systems is presented.

Use has been made of the good separation of the spectral bands on both sides of the Balmer jump in Stromgren *uvby* photometry, to clarify the origin of the ultraviolet excesses $\delta(U-B)$ attributed by Eggen (1967) to the decreased metal abundance in some of the W UMa-type systems. 24 systems visible during the early spring months were observed with four to five observations contributing to the mean as listed in Table I. Contrary to expectations the c_1-index in the surveyed systems is rather normal for expected gravities whereas some systems indeed do show the decreased m_1-index leading to Δm_1 which well correlates with the $\delta(U-B)$ excess as given by Eggen. It can be

TABLE I

Four-colour photometry of W UMa-type systems

Name	Observed range in V	$b-y$	m_1	c_1	Remarks
SS Ari	10.1–10.5	+0.409	+0.201	+0.365	
AH Aur	10.2–10.5	+0.402	+0.199	+0.424	
TZ Boo	10.5–10.9	+0.421	+0.133	+0.279	
XY Boo	10.4–10.7	+0.331	+0.131	+0.369	
AC Boo	10.0–10.1	+0.390	+0.158	+0.305	2 obs. only
44i Boo	4.7–4.8	+0.409	+0.203	+0.295	with visual comp.
TX Cnc	10.0–10.2	+0.392	+0.200	+0.352	
RZ Com	10.4–10.9	+0.354	+0.174	+0.297	
CC Com	11.3–12.0	+0.778	+0.558	+0.057	changes in c_1
BV Dra	7.8–8.5	+0.367	+0.143	+0.308	
BW Dra	8.6–9.0	+0.422	+0.150	+0.317	
YY Eri	8.1–8.3	+0.419	+0.203	+0.319	
AK Her	8.4–8.7	+0.342	+0.167	+0.408	with visual comp.
FG Hya	10.0–10.2	+0.390	+0.181	+0.332	
UZ Leo	9.5–10.0	+0.242	+0.143	+0.683	
XY Leo	9.4–10.3	+0.561	+0.359	+0.341	changes in c_1
AM Leo	9.1–9.3	+0.354	+0.181	+0.331	with visual comp.
ER Ori	9.3–9.5	+0.364	+0.177	+0.342	
Y Sex	9.8–10.1	+0.302	+0.146	+0.466	
RZ Tau	10.1–10.7	+0.422	+0.071	+0.610	
W UMa	7.7–8.3	+0.411	+0.199	+0.296	
AW Uma	6.8–7.1	+0.239	+0.147	+0.613	
AG Vir	8.4–8.5	+0.155	+0.169	+0.822	
AH Vir	9.1–9.7	+0.484	+0.286	+0.343	

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concluded that although rather large observed variations of the c_1-index in latest-type systems might indicate intrinsic emissions shortward of the Balmer jump, the origin of the $\delta\,(U-B)$ excesses should be attributed to the elevated flux level in the v-band of the four-colour photometry.

Reference

Eggen, O. J.: 1967, *Mem. Roy. Astron. Soc.* **70**, 111.

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