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PHOTOMETRY OF UU HERCULIS: 1986-88

UU Her is an F supergiant, located at high galactic latitude. It is the prototype of the so-called UU Her variables (Sasselov 1984). The star was well known because of its supposed period switches, i.e. it changed its period in a very short time from  $\approx 45$  d to  $\approx 72$  d or vice versa. An analysis of visual observations made between 1922 and 1939 showed, however, that the variation of UU Her could be described by (at least) two periods: 72.9 d and 45.3 d

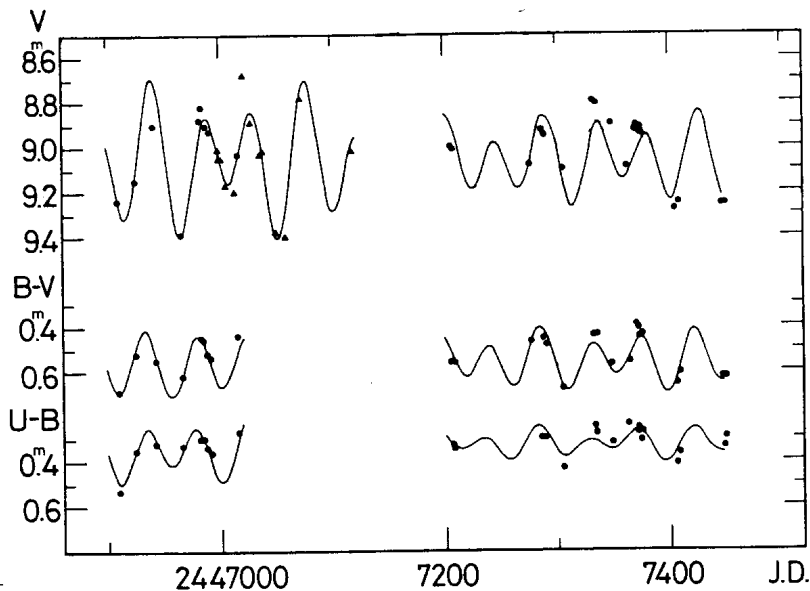


Figure 1

Table I

J.D.	V	B-V	U-B
2446466.639	8.908	0.393	0.241
6560.540	8.720	.367	.242
6678.342	9.074	.648	.356
6679.347	9.096	.652	.360
6853.653	8.621	.261	.551
6910.539	9.237	.692	.526
6925.483	9.154	.518	.354
6942.422	8.902	.546	.315
6966.413	9.391	.622	.329
6983.378	8.884	.449	.302
6984.383	8.824	.459	.304
6988.405	8.906	.521	.336
6991.429	8.926	.540	.359
7016.392	9.036	.443	.274
7207.637	8.998	.555	.334
7208.609	9.014	.556	.337
7277.538	9.079	.471	
7288.507	8.926	.463	.300
7290.496	8.954	.482	.303
7306.442	9.099	.675	.425
7334.491	8.801	.436	.253
7335.468	8.808	.435	.282
7349.355	8.913	.582	.289
.365	8.885	.564	.358
7363.522	9.088	.555	.241
7371.376	8.925	.398	.257
7372.344	8.914	.409	.273
7374.329	8.922	.447	.307
7375.353	8.936	.444	.269
7406.308	9.279	.655	.409
7409.327	9.251	.612	.365
7449.268	9.263	.627	.335
2447450.270	9.263	0.630	0.303

(for details see Zsoldos and Sasselov 1989). These periods are probably always present in the light curve, though with varying amplitude.

Photoelectric photometry of UU Her is very important to decide if there are more periods, and to arrive at more precise values of the periods. Recent photometry of the star was made by Fernie (1986), Sasselov et al. (1987) and Umana et al. (1988). Here we present more observations of the variable, made during 1986-88.

UU Her was observed with the 0.5-m and 1-m telescopes of Konkoly Observatory, at Pizskéstető. The comparison stars

Table II

Year	Colour	A0	A1	A2
1987	V	9.06	0.26	0.48
	B-V	0.56	0.04	0.26
	U-B	0.35	0.08	0.22
1988	V	9.06	0.14	0.30
	B-V	0.56	0.09	0.21
	U-B	0.33	0.06	0.10

were those used by Sasselov et al. (1987). Table I lists the observations, these were transformed into the UB<sub>V</sub> system in the usual way. The light and colour curves of UU Her are plotted in Figure 1 (the triangles are the  $y$  measurements of Umana et al. 1988). These curves were fitted with the two periods mentioned above, the fits are also shown in Figure 1 as continuous lines (the two years, 1987 and 1988, were treated separately because of the amplitude change). The amplitudes of the periods are given in Table II for each colour (A1 and A2 are the amplitudes of the longer and shorter periods, respectively, A0 is the mean magnitude). Figure 1 and Table II confirm the conclusion of Umana et al. (1988) - the dominant period now is the shorter one (45.3 d), its amplitude, however, is already decreasing.

E. ZSOLDOS and J. JURCSIK

Konkoly Observatory  
Budapest XII, P.O.Box 67  
1525 HUNGARY

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