COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 868

Konkoly Observatory
Budapest
1974 February 10

THE PECULIAR VARIABLE STAR V 361 Per

The variability of the star BD +55° 605=HD 14605 was discovered by Weber (1). The preliminary notation of this variable was Wr 175. In the First Supplement to the GCVS (2) it received the final name V 361 Per. On the basis of Weber's observations the star was catalogued as probably cepheic.

This variable star was observed photoelectrically in three colours of the UBV system using the 24 inch reflector at Budapest and the 20 inch Cassegrain reflector at the Piszkéstető Mountain Station of the Konkoly Observatory during the winters of 1972-73 and 1973-74.

The comparison and check stars were BD +55° 596 and BD +55°587, respectively. The magnitude and colours of the check star were taken from the Photoelectric Catalogue of Blanco et al. (3). The comparison star BD +55° 596 was tied-in to the UBV system on four nights. The adopted magnitudes and colours of the comparison and the check stars are listed below:

	V	B-V	U-B
BD +55°587	$8^m.57$	$+0^m.26$	$-0^m.56$
BD +55°596	9.46	+0.34	+0.08

It is worthy of note that the variable is also included in this catalogue (No 2450) because at the time of its compilation there was no information about the variability of HD 14605.

The spectral type of the variable published in the Henry Draper Catalogue, in the Photoelectric Catalogue and in the paper of Schild (4) is O5e, B 0.5 V p and B 1.5 III, respectively, ie. this variable cannot be a cepheid!

In order to study the true behaviour of this variable I observed the star on 53 nights. The observations are listed in the Table. Some nights at the beginning of the first observational

season two observations were obtained, which did not reveal any rapid variations in the light of V 361 Per. It could also be seen if a period existed at all it should have been longer than several days. The further observations, however, showed that the variable star V 361 Per was an irregular variable. From the light and colour curve plotted in the Figure it can be seen that the B-V curve is almost the mirror image of that of the V curve, but with smaller amplitude, and the U-B colour curve resembles to the V curve. This is a well known feature of the late type irregular and long period variables. But this variable has an early type spectrum.

According to Schild (4) V 361 Per=HD 14605 is just in the core contraction phase and is a member of h and χ Per. Lavdovsky's proper motion data (5), however, do not confirm the membership.

The complicate behaviour of this variable makes it an attractive object for further photometric and spectroscopic observations.

I wish to express thanks to Dr.B.Szeidl for helpful discussions.

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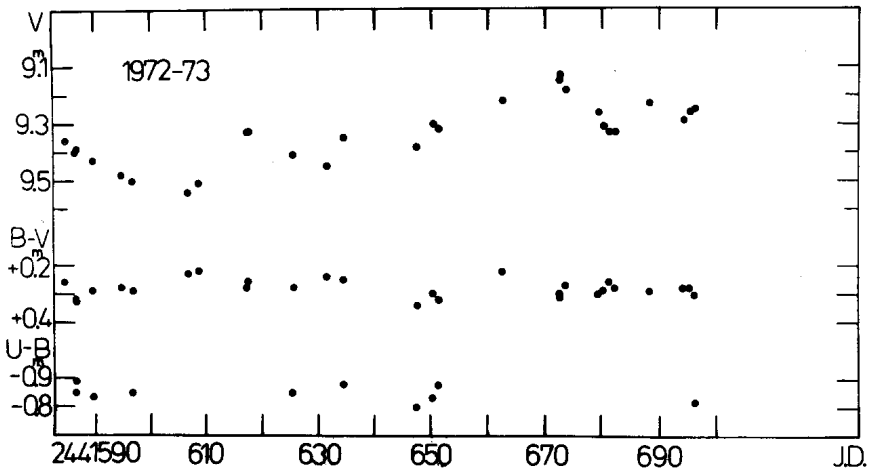
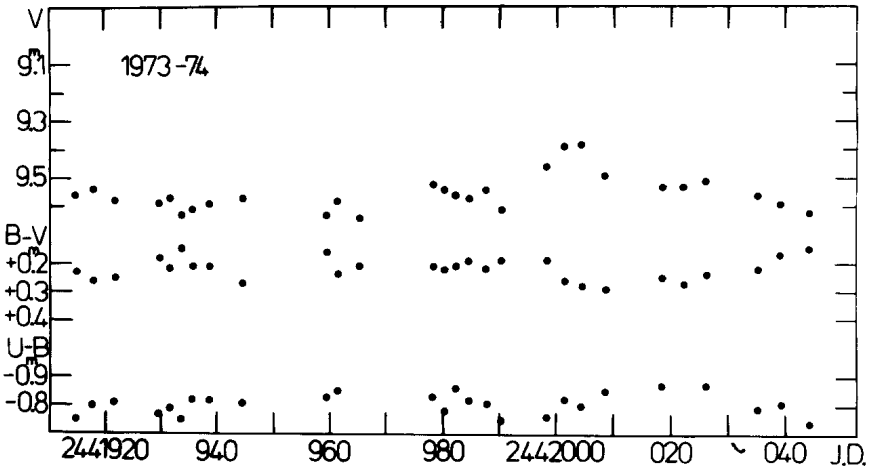
References:

1 Weber R. IBVS, No 230, 1967
2 Kukarkin B.W. et al. First Suppl. to the Third Edition of the GCVS, 1971.
3 Blanco V.M. et al., Publ.of the US Naval Obs.II S.Vol 21, 1968.
4 Schild R.E., Ap.J., 146, 142, 1966.
5 Lavdovsky V.V., Pulkovo Trudy II S.,73,76, 1961.


V
9.1
1972-73
9.3
9.5
B-V
+0.2
+0.4
U-B
-0.9
-0.8
241590
610
630
650
670
690
J.D.


V
9.1
1973-74
9.3
9.5
B-V
+0.2
+0.3
+0.4
U-B
-0.9
-0.8
241920
940
960
980
242000
020
040
J.D.

Observations

JD 2441000+	V	B-V	U-B	JD 2440000+	V	B-V	U-B
584.395	$9^m.36$	$+0^m.26$		1914.588	$9^m.56$	$+0^m.23:$	$-0^m.75:$
586.467	.40	.32	$-0^m.85$	1917.503	.54	.26	.80
.550	.39	.33	.89	1921.504	.58	.25	.79
589.568	.43	.29	.83	1929.574	.59	.18	.77
594.537	.48	.28		1931.518	.57	.22	.79
596.495	.50	.29	.85	1933.492	.63	.15	.75
606.506	.54	.23		1935.478	.61	.21	.82
608.503	.51	.22		1938.536	.59	.21	.82
617.333	.33	.28		1944.407	.57	.27	.81
.392	.33	.26		1959.433	.63	.16	.83
625.401	.41	.28	.85	1961.347	.58	.24	.85
631.426	.45	.24		1965.317	.64	.21	
634.405	.35	.25	.88	1978.319	.52	.21	.83
647.413	.38	.34:	.80:	1980.351	.54	.22	.78
650.285	.30	.30	.83	1982.365	.56	.21	.86
651.286	.32	.32	.88	1984.406	.57	.19	.82:
662.301	.22	.22		1987.657	.54	.22	.81:
672.249	.15	.30		1990.358	.61	.19	.75:
.360	.13	.31		1998.242	.46	.19	.76:
673.260	.18	.27		2001.397	.39	.26	.82
679.246	.26	.30:		2004.281	.38	.28	.80
680.249	.31	.29:		2008.543	.49	.29	.85
681.279	.33	.26		2018.483	.53	.25	.87
682.279	.33	.28:		2022.239	.53	.27:	
688.306	.23	.29		2026.244	.51	.24:	.87:
694.340	.29	.28		2035.331	.56	.22	.79
695.315	.26	.28:		2039.307	.59	.17	.81
696.246	.25	.30	.82	2044.237	.62	.15	.74: