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PHOTOGRAPHIC OBSERVATIONS OF V 1057 CYG

Since the discovery by Welin (Astr.Astrophys. 12,312, 1971), that in late 1969 the low luminosity irregular variable V 1057 Cyg had brightened up several magnitudes, some papers had been published about the light curve of this remarkable variable. Meinunger and Wenzel (MVS 5,170, 1971) published some magnitudes in the rising portion of the light curve, Mendoza (Ap.J.Lett. 169,117, 1971), Cohen and Woolf (Ap.J. 169,543, 1971), Simon, et al. (Astr.Astrophys. 20,99, 1972), Rieke, Lee and Coyne (PASP 84,37, 1972) and Bossen (IBVS 722, 1972) published some magnitudes in the post-outburst portion of the light curve in different colour systems.

Here we present a light curve of V 1057 Cyg in a unique colour system which covers the rising portion and some parts of the post-outburst portion.

On a total of 97 patrol plates taken on Kodak 103a-0 and Agfa 67 A 50 with the 30 cm Sonnefeld-4-lens astrograph of the Observatorium Hoher List of Bonn University between 1969 Oct. 28 and 1973 May 25 we measured the magnitudes of V 1057 Cyg with a Becker type iris-photometer using 8 nearby stars of a photoelectric UBV-sequence in SA 40 (Bigay and Garnier 1970, Astr.Astrophys.Suppl. 1,15). The average error of each measurement is of the order of $\pm 0^m.063$ (see error bar in the figure). For each measurement corrections with respect to different plate background had been computed. The results listed in the table below are plotted in the figure (dots). In addition one measurement (open circle) and the first (dashed) portion of the light curve around the 16th magnitude is taken from Meinunger and Wenzel.

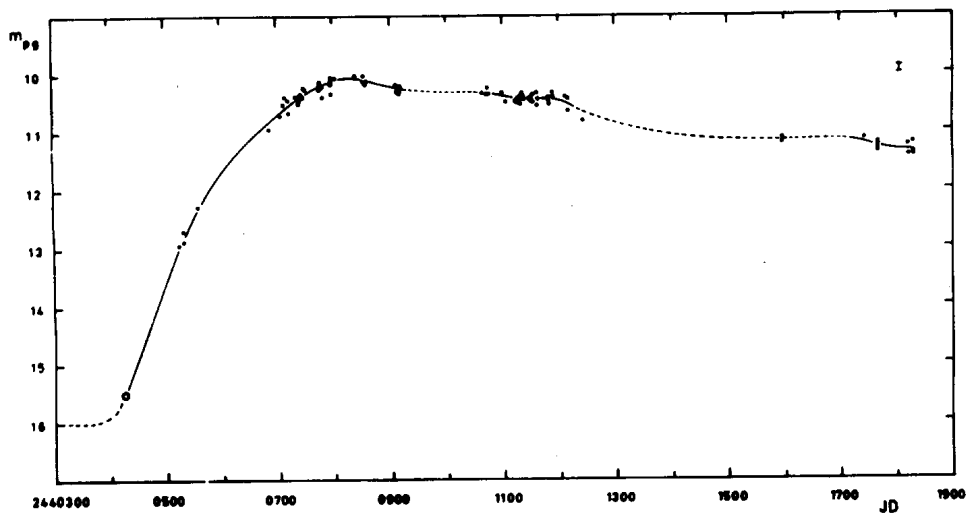
The light curve shows two remarkable phases:

1. The well known rapid brightening phase from about JD 244 0400 to JD 244 0830, that is over about 430 days (much more than estimated by Meinunger and Wenzel).
2. A very slow but steady darkening phase with the indication of two

or more plateaus of nearly constant light. During the last 1000 days from reaching maximum light to the preliminary last measurement on 1973, May 25 the decrease of magnitude of V 1057 Cyg is already of the order of about 1.3 in the photographic region.

More details of this study will be published elsewhere.

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Julian Date	m _{pg}	Julian Date	m _{rg}	Julian Date	m _{pg}
244 0523.38	12.92	244 0795.51	10.13	244 1148.46	10.42
0531.33	12.68	0796.42	10.17	1149.51	10.45
0532.28	12.87	0797.44	10.06	1150.49	10.40
0557.29	12.26	0798.44	10.33	1151.50	10.47
0685.60	10.93	0804.45	10.06	1153.47	10.36
0705.54	10.70	0837.37	10.02	1159.48	10.32
0711.51	10.51	0852.37	10.12	1159.54	10.54
0711.58	10.50	0854.35	10.02	1161.42	10.43
0713.52	10.37	0857.34	10.16	1162.43	10.43
0714.57	10.38	0859.33	10.12	1180.39	10.45
0720.46	10.65	0910.28	10.18	1181.39	10.39
0720.57	10.44	0914.24	10.30	1181.57	10.52
0732.49	10.37	0916.25	10.32	1188.41	10.31
0738.49	10.45	0916.34	10.29	1189.47	10.39
0739.42	10.47	0917.29	10.20	1210.33	10.38
0739.49	10.42	1062.59	10.31	1214.41	10.64
0739.55	10.38	1070.59	10.34	1215.36	10.42
0740.44	10.44	1071.58	10.24	1216.32	10.41
0740.51	10.41	1075.59	10.34	1241.32	10.80
0741.45	10.37	1098.52	10.32	1593.34	11.19
0741.51	10.41	1104.54	10.48	1593.37	11.12
0742.46	10.40	1124.54	10.48	1741.66	11.13
0742.48	10.34	1125.50	10.46	1765.62	11.31
0746.51	10.38	1126.48	10.47	1765.628	11.23
0749.43	10.23	1126.52	10.49	1765.63	11.34
0749.50	10.25	1127.49	10.40	1765.64	11.21
0774.44	10.25	1130.46	10.52	1819.506	11.24
0774.53	10.22	1131.48	10.52	1819.510	11.42
0775.43	10.19	1133.48	10.37	1828.550	11.37
0776.50	10.20	1133.53	10.33	1828.555	11.42
0777.45	10.13	1134.49	10.38	1828.559	11.20
0780.48	10.21	1136.50	10.42		
0781.44	10.39	1146.42	10.42		