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THE BEHAVIOUR OF FG Vul IN 1984

The semiregular variable M5II-star FG Vul, which is a member of the old open cluster NGC 6940 (Götz, 1981, 1984) was measured in B (ORWO ZU21+GG13+BG12) on 13 plates obtained with the 50/70/172 cm Schmidt camera of Sonneberg Observatory covering the time interval between 23 April 1984 and 13 December 1984 (Götz).

In addition, photoelectric observations in U, B and V from 8 nights between 8 July 1984 and 30 October 1984 were obtained (Luthardt).

The sequence of comparison stars used is given by Götz (1984). In that paper the magnitudes m_B of FG Vul are not corrected concerning extreme colour influences. Admitting a mean difference $B-m_B = -0.47$ mag, which results from two nearly synchronous photographic and photoelectric measurements the former observations of FG Vul can be reduced to B-magnitudes. In the present paper the corrections given are taken into account.

The photoelectric observations are linked to the star No. 100 of the list of Vasilevskis and Rach (1957). Its photometric parameters $V = 10^m.44$, $B-V = +0.74$ and $U-B = +0.44$ are given by Walker (1958). The individual observations of FG Vul obtained in 1984 are listed in Table I and Table II.

Table I
 Photographic observations in 1984

J.D.	244...	B	244...	B
	5814.57	10 ^m 83	5946.41	11 ^m 01
	5815.58	11.03	5973.43	10.90
	5818.58	10.93	6000.36	10.35
	5822.57	11.01	6003.37	10.85
	5871.47	10.83	6034.23	11.20
	5935.43	10.85	6048.25	11.07
	5940.42	10.89		

Table II
 Photoelectric observations in 1984

J.D.	244...	V	B-V	U-B
	5890.53	9 ^m 31	1 ^m 73	1 ^m 37
	5903.53	9.16	1.74	
	5916.48	9.02	1.76	1.45
	5925.45	9.07	1.72	
	5926.51	9.07	1.75	1.44
	5935.53	9.13	1.75	1.35
	5946.47	9.25	1.74	1.25
	6004.31	9.03	1.74	

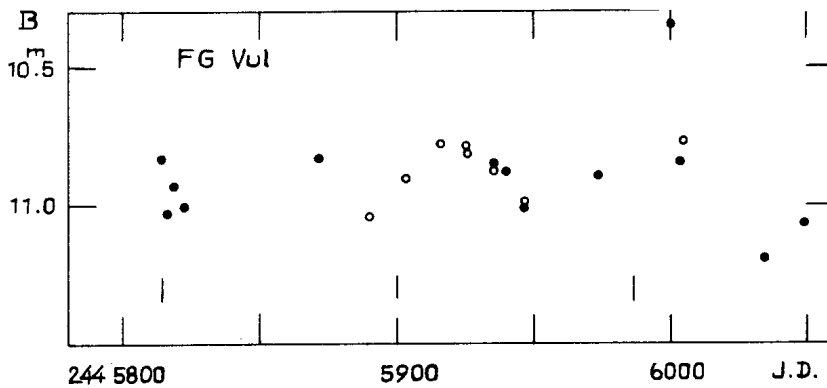


Figure 1

The light curve of the star in 1984 is given in Figure 1. The photoelectric observations are marked by circles there. The dates of minima, which can be expected according to the preliminary elements given by Götz (1984) are also marked in this Figure.

Comparing the given light curve with that of the year 1983 it can be seen that in 1984, apart from one observation ($B=10^m35$) the mean amplitude of the star became smaller ($\Delta B=0^m4$). But also in this case the light curve is characterized by well defined minima, which are arranged in irregular succession.

The regularities known from light curves of former years are lost and only the minimum at J.D. 244 5890 can approximately be presented by the given elements ($O-C = -10^d$).

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