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PHOTOELECTRIC PHOTOMETRY OF THE W UMa
TYPE VARIABLE STAR FG HYDRAE

The variable FG Hydrae (BD+3^o1979) was discovered by Hoffmeister (1934). It was classified as a cluster type by Tsesevich (1949) using visual observations. FG Hydrae was considered by Smith (1954, 1955) as one of the short period binaries that undergoes complete eclipses. In spite of the fact that the observations taken by Smith did not cover a complete cycle of variation his data help to define quite well a relatively early epoch. His observations obtained in 1963 (Smith, 1963) which consist of 306 blue and 246 yellow observations of FG Hydrae including data from 11 nights gave a complete light curve of FG Hydrae and 3 times of minima which are given in Table I.

Table I
Times of minima of FG Hydrae obtained by Smith (1963)

JD.Hel	Min.	O-C
2434056.7184	II	+0.0001
4057.7018	II	0.0000
4084.5842	II	0.0000

Observations made by Binnendijk (1963) led to a complete light curve and improved period determination.

FG Hydrae was included in the programme of short period variables running out at Kottamia Observatory using the 74" reflector.

The observations were carried out by a one beam photoelectric photometer which was attached at the cassegrain focus (f/18). Standard B and V filters with EMI 9558 B photomultiplier tube with S-20 photocathode cooled by a propeller fan, were used through all the intervals of observations. The amplified output of the tube was fed into a Brown recorder. The times of observations were estimated from the starting point and the moving mean speed of the strip chart recorder. Table II lists the pertinent data regarding the variable and comparison stars.

Table II

Star	BD	Spectral type
FG Hydrae	+ ^o 3 1979	G0V
Comparison	+ ^o 4 1979	G5V

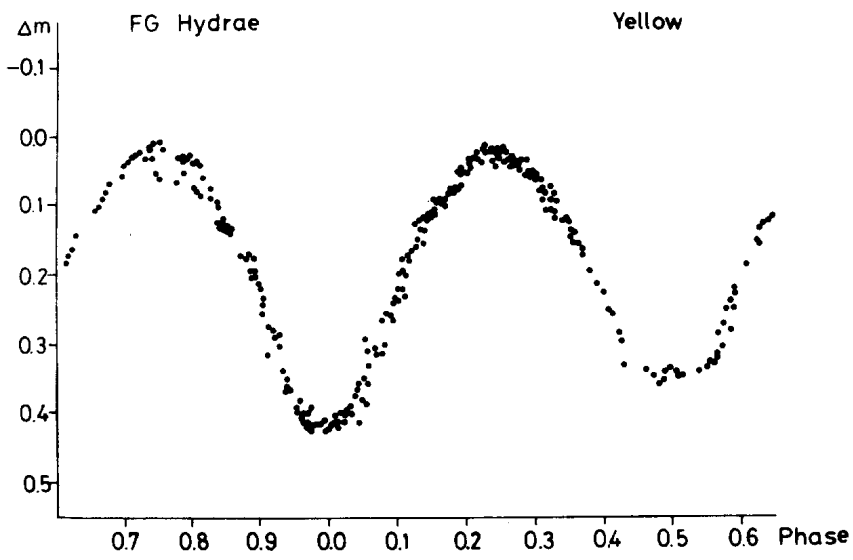


Figure 1

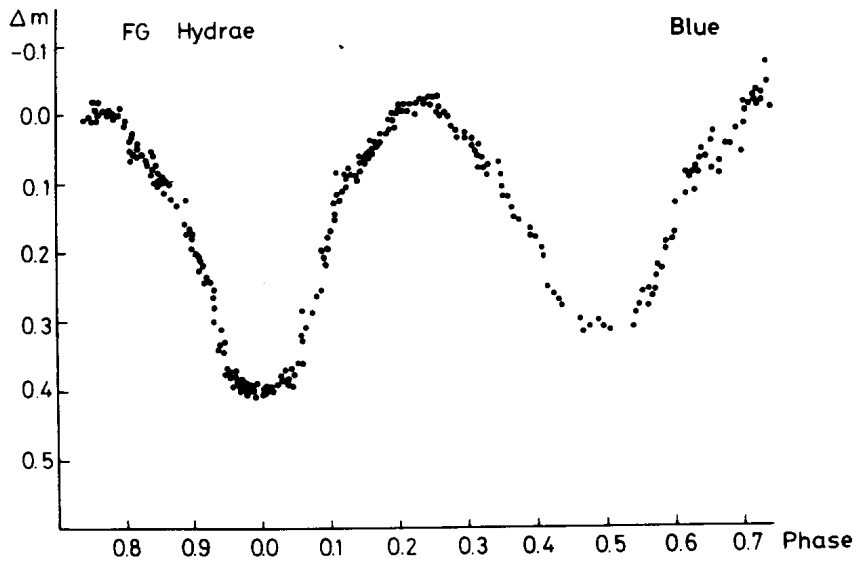


Figure 2

A total of 395 observations in B and 385 observations in V were obtained including the data of 4 nights during Jan and Feb. 1985. The light curves of FG Hydrae obtained in both B and V colours are shown in Figures 1 and 2.

Five times of primary minima and one time of secondary minima were determined in both B and V colours. Three times of minima are given in Table III.

Table III

J.D.Hel.	Min.	Filter	E	O-C
2446089.3543	I	V	27821.0	-.0017
89.3546		B		-.0014
90.3678	I	V	27824.0	-.0013
90.3679		B		-.0012
90.5316	II	V	27824.5	-.0014
.5312		B		-.0010
2446109.3822	I	V	27882.0	-.0013
.3821		B		-.0014
10.3654	I	V	27885.0	-.0016
.3655		B		-.0015
11.3491	I	V	27888.0	-.0014
.3493		B		-.0012

The residuals were computed from the following ephemeris

$$\text{Min. I} = 2436968.7067 + 0.32783433 E$$

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