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OBSERVATIONS OF THREE U GEMINORUM STARS

The U Geminorum stars PU, PV and V 372 Persei have been discovered at Sonneberg Observatory in a field around R.A. 2^h40^m; D = +37°. Only few informations on these stars have been published by C. Hoffmeister (1967) and it is interesting to collect other observations for a better knowledge of their light curve.

To this purpose we have examined 67 blue (103a-O + GG 13) and 40 yellow plates (103a-D + GG 14) taken with the 67/90/210 Schmidt telescope of the Asiago Astrophysical Observatory between JD 2439145 and JD 2441975.

The B and V magnitudes of the comparison stars have been determined with the U,B,V sequence established by F. Bertola (1963, 1965) near the galaxy NGC 1058.

The variables

PU Per - This star shows two maxima in blue light. The first, at JD 2440644, is faint (17.4) and narrow with rapid evolution; the second is brighter (15.2) and larger (duration 6 days). Table I lists the observations near the maxima.

Table I

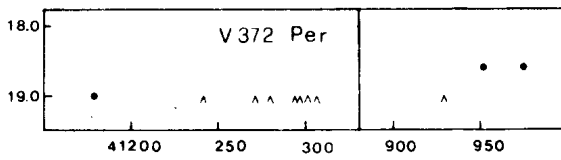
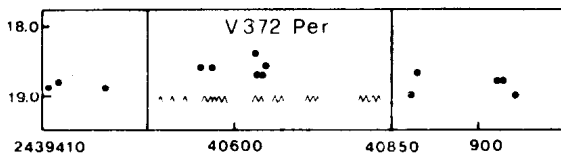
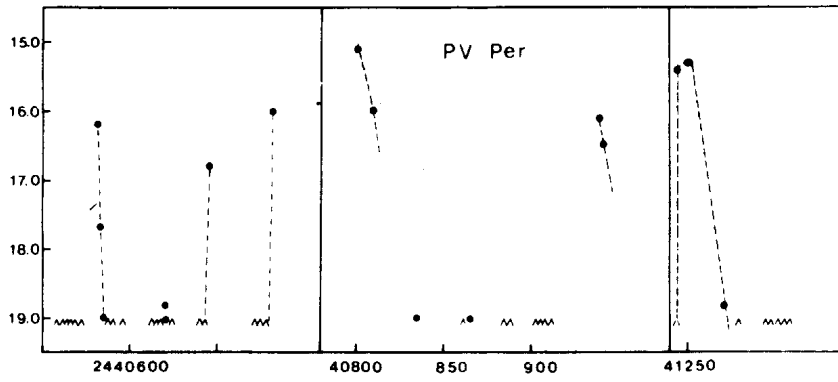
I Max JD 24....	II Max JD 24....
40641 <19.0	41280 <19.0
644 17.4	295 15.2
645 <19.0	298 15.2
	301 16.6
	303 19.0
	308 <19.0

At minimum the variable presents light fluctuations near 19.0 B. The variations occur from 15.2 to <19.0.

PV Per - Table II gives the list of B and V maxima observed in our material.

Table II

Max. 24....	B	V	Max. 24....	B	V
39145	15.6	-	40802	15.1	15.3
732	16.7	-	940	16.1	16.0
40582	16.3	16.4	41250	15.3	-
646	16.3	-	542	15.3	-
682	16.0	-			



A mean cycle of 36 days satisfies the observations. The light curve of Fig.1 shows the occurrence of maxima faint and narrow, together with maxima bright and wide.

The B-V colour is about -0.1 at maximum. At minimum V light the star is below the plate limit.

The star varies between 15.1 and <19.0 in B and between 15.3 and <18.2 in V. On blue print of Palomar Sky Survey this star's apparent magnitude at minimum has been estimated about 20^m. It is possible that the variations in B are between 15^m1 - 20^m.

V 372 Per - In the present material this star is always near minimum. Fig.2 shows that the variable presents fluctuations between 18.4 and <19.0 B.

The colour B-V has been determined in the following occasions:

JD 24...	B	V	B - V
40866	18.7	18.1	+ 0.6
40915	18.8	18.0	+ 0.8

These values agree with the mean colour index of the U Geminorum stars near the minimum light. The presence of some galaxies around these variables suggests that the field is almost free of interstellar absorption.

The B magnitude 16.5 derived by C. Hoffmeister on the Palomar blue print is probably that of an intermediate phase between the maximum and minimum.

Concluding remarks:

During the period of our observations the three U Geminorum stars PU, PV and V 372 Persei show the characteristics listed in Table III.

Table III

Var.	B max.	V	B min.	V	max. B-V	min.	cycle
PU Per	15.2	-	<19.0	-	-	-	-
PV Per	15.1	15.3	<19.0	18.2	-0.1	-	36 ^d
V372Per	-	-	<19.0	-	-	+0.6; +0.8	-

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References:

- Bertola, F. 1963 Asiago Contr, No.142.
 1965 Asiago Contr.No.171
 Hoffmeister, C. 1967.A.N. 290, H 1 - 2, 43.