TABLE 6.

Δx	m 17·13	m 17·12	m 16·74	m 16·51	m 16·34	m 15·94	m 15·67	m 15·53	m 15·14
− 5′	3	3	1	1	1	1	1	1	1
− 4	12	12	10	8	7	5	4	3	2
− 3	15	13	6	8	5	1	1	1	0
− 2	28	29	18	18	10	4	2	1	0
− 1	49	47	33	23	14	4	1	1	1
0	121	122	83	59	34	17	7	1	0
+ 1	54	57	37	32	16	8	4	3	0
+ 2	33	34	22	16	10	5	4	4	0
+ 3	17	15	11	10	5	2	1	1	1
+ 4	10	11	8	7	6	4	0	0	0
+ 5	8	7	4	5	3	1	2	1	0
Δy									
− 5′	11	10	4	4	3	1	1	1	1
− 4	9	8	7	6	5	3	0	0	0
− 3	19	18	12	11	8	5	3	2	0
− 2	23	24	12	11	7	6	4	4	1
− 1	55	58	35	27	18	8	6	3	2
0	110	111	77	59	34	14	7	3	0
+ 1	68	68	50	39	19	8	3	3	1
+ 2	30	28	18	14	9	3	2	0	0
+ 3	11	12	8	6	3	2	0	0	0
+ 4	8	7	7	7	4	2	2	1	0
+ 5	6	6	3	3	1	0	0	0	0
sum	350	350	233	187	111	52	27	17	5
plate	(354)	(367)	(367)	(354)	(367)	(367)	(354)	(367)	(354)

with the distribution of the variable stars. Corresponding to the distances derived above the linear diameter is found to be 6 ps and its upper limit 24 ps. Notwithstanding the many uncertainties involved it seems very probable that the linear dimensions of this globular cluster are comparable with those of galactic clusters like the double cluster in Perseus and others, whereas BAADE [1]) derived a value of about 100 ps for the linear diameter of five rich and concentrated globular clusters.

Finally it is worth mentioning that the variables at maximum belong to the brightest stars in this cluster, as it is shown by Table 6 that practically no stars exist brighter than $15^m{\cdot}2$.

[1]) *Ap.J.* **82**, 396; *Mt Wilson Contr.* No. 529.

The lightvariation of VX Hydrae, by *P. Th. Oosterhoff.*

The variability of this star was discovered by HOFFMEISTER [1]). Observations by LAUSE [2]) indicated that the lightvariation of this variable is similar to that of the RR Lyrae-type stars, but the period, $^d{\cdot}175881$, derived by LAUSE does not represent all his observations in a satisfactory manner. For this reason the star was observed photographically with the 10 inch refractor of the Mount Wilson Observatory during the opposition of 1934.

Since these observations were made three more notes about this star have been published by LAUSE [3]) and LANGE [4]). They both conclude that, although the star resembles a cluster type variable, its lightvariation shows an irregular character. From a discussion of the epochs of maximum brightness the former derives periods of about ·209 and ·182 days which however leave both large residuals.

[1]) *A.N.* **242**, 131, 1931. [2]) *A.N.* **246**, 299, 1932.
[3]) *A.N.* **253**, 369, 1934 and *A.N.* **264**, 143, 1937.
[4]) *Tadjik Obs. Circ.* **4**, 1935.

In the present investigation Eastman 40 plates, $4'' \times 5''$, were used, the time of exposure being 3 minutes. A screen with a square opening was put in front of the plate so that nearly one square degree was photographed each time. In this way six exposures could be made on one plate. The plates were measured in a Schilt microphotometer of the Leiden Observatory. The comparison stars are:

	α (1900)	δ (1900)	m_{pg}
a	$9^h39^m23^s$	$-11°24'·8$	9·66
b	9 40 28	−11 55 ·6	10·44
c	9 41 14	−11 46 ·0	10·92
d	9 41 35	−11 39 ·4	11·46
var.	9 40 56	−11 32 ·6	— —

The scale and zeropoint of the magnitudes were derived from two comparisons with the Polar Sequence. The resulting magnitudes of the variable are listed in the table.

The individual observations of six nights, during which a considerable part of the period has been observed, are plotted in the accompanying figure. The J.D. — 2420000 are indicated in each diagram. The increase in brightness is considerably faster than the decrease and the observations prove that the star should be classified as a cluster type variable. The following epochs of maximum could be determined with fair accuracy:

epoch of max.	$4^{d-1}·7857$	$5^{d-1}·4804$
d	P	P
2427532·820	·00	·00
35·745	14·00	16·03
36·814	19·11	21·89
45·773	61·99	70·99
71·686	186·00	213·00

Though the periods derived by LAUSE give an accurate representation of four of these epochs, they do not fit the observations as a whole. No period satisfying all observations could be found. The possibility exists that the lightvariation of VX Hya is of a more complicated character similar to AI Vel[1]) or RW Dra[2]) for instance. More observations preferably taken at different longitudes will be necessary in order to determine the elements of the lightvariation of this star.

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1) F. ZAGAR, A. VAN HOOF, *B.A.N.* No. 300, 1937.
2) J. BALÁZS, L. DETRE, *Abh. Obs. Budapest-Svábhegy* **5**, 1938.

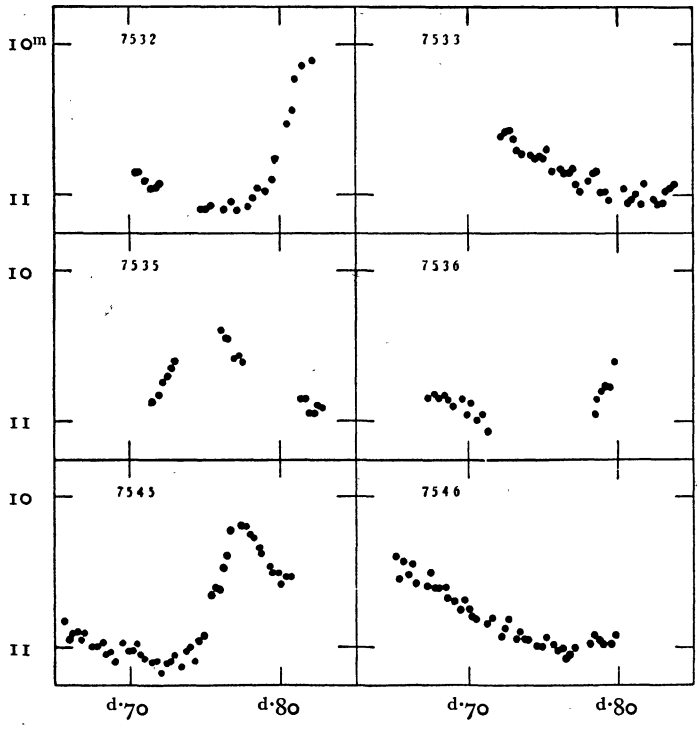

plate number	J.D. Hel. M.A.T. Gr. − 2420000	m_{pg}	plate number	J.D. Hel. M.A.T. Gr. − 2420000	m_{pg}	plate number	J.D. Hel. M.A.T. Gr. − 2420000	m_{pg}	plate number	J.D. Hel. M.A.T. Gr. − 2420000	m_{pg}
	d	m		d	m		d	m		d	m
41	7532·704	10·84	53	7533·824	11·02		7537·720	10·82		7545·684	11·04
	·707	10·84		·827	11·06		·723	10·80		·687	11·03
	·711	10·91		·830	11·05	84	·728	10·79		·690	11·09
	·714	10·96		·832	10·97		·730	10·89	97	·696	10·97
	·718	10·95		·835	10·95		·733	10·87		·699	11·02
	·721	10·93		·838	10·93		·736	10·82		·702	11·02
42	·748	11·09					·739	10·88		·704	10·98
	·751	11·09	58	7534·709	10·88		·742	10·90		·707	11·05
	·754	11·07		·712	10·79	85	·747	10·80		·710	11·07
	·763	11·09		·714	10·77		·750	10·84	98	·716	11·09
	·768	11·04		·717	10·88		·752	10·89		·718	11·09
	·772	11·10		·720	10·87		·755	10·93		·721	11·17
43	·779	11·07		·723	10·82		·758	10·87		·724	11·11
	·782	11·02					·761	10·78		·727	11·09
	·786	10·95	65	7535·716	10·87	86	·767	10·89		·729	11·06
	·790	10·98		·719	10·83		·770	10·87	99	·735	11·13
	·794	10·90		·722	10·74		·774	10·98		·738	11·02
	·797	10·76		·725	10·70		·777	10·90		·740	11·00
44	·804	10·53		·728	10·65		·781	10·87		·743	11·09
	·808	10·44		·730	10·60		·784	10·88		·746	10·96
	·811	10·23	66	·761	10·40	87	·792	10·84		·749	10·93
	·815	10·14		·764	10·45		·796	10·80	100	·754	10·66
	·818	9·92:		·766	10·45		·799	10·83		·757	10·61
	·822	10·11		·769	10·58		·803	10·79		·760	10·62
				·772	10·57		·806	10·80		·763	10·48
				·775	10·61		·810	10·76		·765	10·39
48	7533·722	10·61	68	·814	10·85					·768	10·22
	·725	10·58		·817	10·85				101	·774	10·19
	·728	10·57		·820	10·94	92	7541·648	10·90		·777	10·20
	·730	10·63		·822	10·94		·651	10·76		·780	10·25
	·733	10·70		·825	10·89		·653	10·89		·783	10·27
	·736	10·73		·828	10·91		·656	10·77		·786	10·34
49	·742	10·74					·659	10·86		·788	10·38
	·745	10·75	73	7536·673	10·84		·662	10·79	102	·793	10·46
	·748	10·75		·677	10·82	93	·668	10·93		·796	10·50
	·750	10·75		·680	10·84		·671	10·81		·799	10·51
	·753	10·70		·684	10·83		·674	10·88		·801	10·58
	·756	10·84		·687	10·86		·676	10·84		·804	10·53
50	·762	10·82		·691	10·90		·679	10·89		·807	10·53
	·764	10·86	74	·696	10·86		·682	10·87			
	·767	10·86		·699	10·96	94	·715	10·94	107	7546·652	10·40
	·770	10·83		·702	10·88		·718	11·01		·654	10·55
	·773	10·93		·706	10·99		·720	10·95		·657	10·43
	·775	10·98		·709	10·96		·723	10·89		·660	10·52
51	·781	10·91		·713	11·07		·731	10·97		·663	10·44
	·784	10·85	77	·784	10·95		·734	10·90		·666	10·57
	·786	10·84		·786	10·86				108	·673	10·59
	·789	10·98		·789	10·81	95	7545·657	10·83		·675	10·51
	·792	10·98		·792	10·77		·660	10·94		·678	10·61
	·795	11·03		·795	10·77		·662	10·91		·681	10·61
52	·804	10·96		·798	10·61		·665	10·90		·684	10·61
	·807	11·05					·668	10·95		·686	10·67
	·809	11·03	83	7537·709	10·93		·670	10·91	109	·691	10·69
	·812	10·99		·712	10·80	96	·676	10·99		·694	10·75
	·815	11·06		·714	10·87		·679	10·99		·697	10·69
	·818	10·92		·717	10·79		·682	10·97		·700	10·75

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	d	m		d	m		d	m		d	m
	7546·702	10·79		7571·673	10·43	140	7574·671	10·82		7575·703	10·69
	·705	10·81		·676	10·30		·674	10·83		·706	10·74
110	·713	10·84		·679	10·27		·676	10·78	150	·712	10·83
	·716	10·81		·681	10·16		·679	10·90		·715	10·75
	·719	11·08:		·684	10·25		·682	10·90		·718	10·77
	·722	10·93	118	·691	10·26		·685	10·83		·721	10·77
	·724	10·88		·694	10·23	141	·693	10·84		·723	10·86
	·727	10·81		·697	10·22		·696	10·88		·726	10·83
111	·732	10·94		·699	10·50		·698	10·96			
	·735	10·90		·702	10·40		·701	11·04	156	7576·677	10·62
	·738	10·94		·705	10·48		·704	10·95		·680	10·76
	·740	10·95					·707	10·98		·682	10·77
	·746	10·99	126	7572·694	10·86	142	·713	11·12		·685	10·64
	·749	10·99		·696	10·87		·716	11·01		·688	10·65
	·752	10·93		·699	10·96		·719	11·06		·691	10·83
112	·757	10·98		·702	10·92		·721	11·02	157	·696	10·77
	·760	11·02		·705	10·92		·724	11·07		·699	10·75
	·763	11·01		·708	10·94		·727	11·10		·702	10·77
	·765	11·07								·705	10·84
	·768	11·04	133	7573·669	11·07	148	7575·673	10·64		·707	10·78
	·771	11·00		·672	10·92		·676	10·68		·710	10·91
113	·781	10·97		·674	10·97		·678	10·67	158	·716	10·88
	·784	10·93		·687	11·04		·681	10·63		·718	10·93
	·788	10·96	134	·693	10·95		·684	10·69		·721	10·89
	·791	10·98		·698	10·91		·687	10·53:		·724	10·86
	·795	10·98		·701	10·99	149	·692	10·68		·727	10·82
	·798	10·92		·703	11·00		·695	10·78		·729	10·86
				·706	10·83		·698	10·71			
117	7571·669	10·57		·709	10·86		·700	10·73			