TABLE 3 (*continued*).

SV Vel			WW Car			SX Car		
number of plates	phase P	mag. Sz m	number of plates	phase P	mag. Sz m	number of plates	phase P	mag. Sz m
10	·523	3·43	10	·425	2·36	10	·473	2·80
10	·554	3·28	10	·432	2·37	10	·488	2·68
10	·573	3·22	10	·442	2·49	10	·508	2·67
10	·583	3·24	10	·475	2·67	10	·519	2·60
10	·591	3·15	10	·501	2·66	10	·528	2·46
10	·606	3·02	10	·513	2·70	10	·540	2·44
10	·618	3·04	10	·528	2·83	10	·556	2·14
10	·630	2·93	10	·543	2·82	10	·567	1·99
10	·651	2·82	10	·564	2·82	10	·579	2·05
10	·660	2·76	10	·584	2·93	10	·594	1·88
10	·678	2·77	10	·593	2·97	10	·612	1·68
10	·691	2·75	10	·606	3·06	10	·636	1·53
10	·700	2·74	10	·621	3·03	10	.654	1·35
10	·714	2·64	10	·635	3·06	10	·670	1·30
10	·725	2·57	10	·646	3·05	10	·688	1·31
10	·735	2.46	10	·654	3·17	10	·708	1·27
10	·754	2·16	10	·677	3·30	10	·720	1·32
10	·769	1·73	10	·705	3.34	10	·733	1·33
10	·779	1·53	10	·719	3·42	10	·746	1·26
8	·790	1·43	10	·730	3·37	10	·764	1·27
10	·796	1·26	10	·743	3·48	10	·782	1·53
10	·804	1·24	10	·756	3·33	10	·794	1·52
10	·818	1·11	10	·774	3·30	10	·816	1·60
10	·826	1·11	10	·789	3·43	10	·839	1·62
10	·837	1·04	10	·804	3·55	10	·858	1·83
10	·865	1·29	10	·824	3·59	10	·870	1·75
10	·880	1·35	10	·842	3·57	10	·880	1·80
10	·898	1·45	10	·859	3·61	10	·894	1·75
10	·921	1·53	10	·878	3·71	10	·911	1·77
10	·942	1·71	10	·915	3·70	10	·924	1·77
10	·957	1·74	10	·945	3·79	10	·937	1·92
10	·966	1·74	10	·961	3·75	10	·953	2·05
10	·979	1·82	10	·976	3·78	10	·971	2·12
10	·986	1·87	16	·992	3·67	9	·991	2·07

TABLE 4.

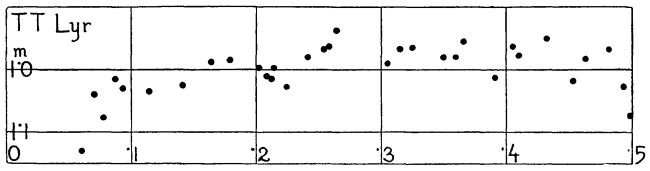
SV Vel			WW Car			SX Car		
number of plates	phase P	mag. Sz m	number of plates	phase P	mag. Sz m	number of plases	phase P	mag. Sz m
20	·022	2·04	30	·018	3·90	30	·048	2·20
20	·056	2·16	30	·054	3·78	30	·114	2·42
20	·103	2·35	30	·106	3·79	30	·153	2·46
20	·148	2·51	30	·168	3·61	30	·193	2·52
20	·194	2·76	30	·219	3·04	30	·252	2·67
19	·243	2·90	30	·260	2·64	30	·305	2·77
20	·264	3·07	30	·304	2·26	30	·349	2·83
20	·290	3·15	30	·365	2·23	30	·396	2·86
20	·331	3·30	30	·414	2·38	30	·455	2·80
23	·361	3·43	30	·450	2·51	30	·505	2·65
20	·410	3·40	30	·514	2·73	30	·541	2·35
20	·455	3·52	30	·564	2·86	30	·580	1·97
20	·507	3·53	30	·607	3·02	30	·634	1·52
20	·538	3·34	30	·645	3·10	30	·689	1·29
20	·578	3·21	30	·700	3·36	30	·733	1·30
20	·598	3·08	30	·743	3·40	30	·780	1·44
20	·624	2·98	30	·789	3·43	30	·838	1·68
20	·656	2·79	30	·842	3·59	30	·881	1·77
20	·684	2·76	30	·913	3·74	30	·924	1·82
20	·707	2·69	28	·975	3·74	29	·971	2·08
20	·730	2·52						
20	·762	1·94						
18	·784	1·48						
20	·800	1·25						
20	·822	1·11						
20	·851	1·16						
20	·889	1·40						
20	·931	1·62						
20	·962	1·74						
20	·982	1·82						

Photographic observations of TT Lyrae made on plates taken at Potsdam, by *St. Szeligowski.*

In the years 1910, 1911 and 1913 Prof. E. HERTZSPRUNG took a series of plates of RR Lyrae with the UV Zeisstriplet at Potsdam (cf. *B.A.N.* 24). On these plates the variability of TT Lyrae was discovered. Though this Algol variable is too faint for measurement on the plates when near its minimum, it was thought worth while to examine the material in view of detecting a slight variation of the star between minima due to reflection or ellipticity.

The plates have been taken 3 mm. intrafocal and the diameter of the star discs thus produced is ·3 mm. The 11 first plates (taken before J.D. 2418802) were taken with the telescope west and the rest of the plates with the telescope east of the pillar. The positions of the comparison stars and their magnitudes adopted for the two positions of the instrument are:

	BD	α (1855)	δ (1855		Sp.	magnitude with telescope West	East
	°	h m s	° ′	m		m	m
TT Lyr	+ 41 3353	19 22 49·2	+ 41 24·7	8·8	A	var.	var.
a	+ 41 3350	22 14·8	41 10·9	8·3	Fo	·90	·80
b	+ 41 3345	21 4·6	41 30·7	8·4	A3	1·01	1·02
c	+ 41 3346	21 35·3	41 34·5	8·2	G	1·10	1·13
d	+ 40 3721	21 14·5	40 58·0	9·0	—	1·39	1·37
e	+ 41 3355	23 2·0	41 23·6	9·2	—	1·95	1·91
f	+ 41 3359	23 14·8	41 18·7	8·8	—	2·00	2·05
g	+ 41 3351	22 36·4	41 26·0	9·1	—	2·11	2·10



The plates were measured in the Schilt thermopile-microphotometer. The mean results for each plate are given in Table 1. One or two asterisks after the number of exposures used indicates that respectively one or two more exposures were present on the plate. The influence of these omissions on the mean epoch of the plate has been disregarded. The phase is given in fractions of the period according to the formula:

$$P - 200 = \cdot 19070307 \quad (\text{J. D. hel. M. astr. T. Grw.} - 2419680\cdot 649)$$

All plates, on which the variable was too faint for reliable measurement, have been omitted. The results from two plates, on which the magnitude of the variable was derived by extrapolation, are shown in parentheses in Table 1 and no further use has been made of them.

Supposing the lightcurve to be symmetrical with respect to the primary minimum, the remaining 139 observations were now arranged according to the phase counted without regard to sign from the nearest primary minimum. The mean values obtained in this way for groups of 4 plates each (the last group contains only 3 plates) are given in Table 2. The accompanying diagram represents these same mean values with the exception of the two first ones, which are already lying well within the eclipse.

Though no definite variation between minima is shown, it is noted that the faintest magnitude well outside the primary minimum, viz. $1^m\cdot 07$, is found at the phase $^P\cdot 498$, where the secondary minimum is to be looked for, and there is an uncertain trace of increase in the brightness of the variable from primary to secondary minimum as is to be expected from a reflection effect.

From the differences between the observations following each other in phase the mean error of one plate is found to be $\pm\, ^m\cdot 041$ corresponding to a total weight of all the plates of $139/(\cdot 041)^2 = 83000\ m^{-2}$. The mean error of one plate derived in the same way from the differences between the mean values of 4 plates is a little larger, viz. $\pm\, ^m\cdot 047$, corresponding to a total weight of $63500\ m^{-2}$.

Forming means for a greater number of plates, where the variation is small, the following values are obtained

number of plates	phase	mag.	m. e.
	P	m	m
4	·032	1·91	± ·021
4	·039	1·60	± ·021
4	·060	1.13	± ·021
16	·082	1·041	± ·010
16	·149	1·008	± ·010
36	·231	·988	± ·007
25	·338	·976	± ·008
27	·436	·979	± ·008
4	·493	1·03	± ·021
3	·498	1·07	± ·024

TABLE 1.

J. D. hel. M. T. Grw.	number of exposures	epoch and phase	mag.	J. D. hel. M. T. Grw.	number of exposures	epoch and phase	mag.	J. D. hel. M. T. Grw.	number of exposures	epoch and phase	mag.
		P	m			P	m			P	m
2418793·555	8	30·828	1·03	2418920·514	7*	55·040	1·41	2418993·249	2	68·911	·94
95·470	8	31·194	·98	26·434	8	56·169	·91	·253	2	·912	1·07
·494	8	·198	1·01	·459	8	·174	·98	9273·472	8	122·350	·94
·518	8	·203	1·00	·476	8	·177	·95	·494	8	·355	·95
·542	8	·207	·97	27·466	3	·366	·88	·515	8	·358	·97
·562	3*	·211	·95	44·367	8	59·589	·98	·538	8	·363	·95
97·462	8	·574	·95	·389	8	·593	·93	·557	8	·366	·91
·488	8	·578	·98	·405	8	·596	·93	75·480	8	·733	·89
99·453	5	·953	1·38	·427	8	·600	1·00	·498	8	·737	·94
8801·463	7*	32·336	1·01	46·355	8	·968	1·91	·527	9	·742	·95
·487	8	·341	·97	·373	9	·971	1·81	76·448	8	·918	1·06
04·420	8	·901	1·06	52·348	9	61·111	1·00	·464	8	·921	1·11
8917·455	8	54·457	·97	53·332	8	·298	1·00	·487	9	·925	1·06
·471	8	·460	1·02	·350	9	·302	1·02	·505	9	·928	1·09
·500	8*	·465	·97	58·344	3	62·254	1·00	·528	8*	·933	1·09
·521	8	·469	·94	·360	3	·257	1·00	·545	8	·936	(1·08)
19·428	8	·833	·99	·376	3	·260	·97	80·456	8	123·682	·90
·455	9	·838	1·00	70·285	4**	64·532	·93	·474	8	·685	·98
·481	8	·843	1·05	72·278	8	·912	·99	·489	6	·688	·94
·500	8	·846	1·03	93·219	2	68·905	1·04	83·469	9	124·256	·93
·522	8	·851	1·00	·224	2	·906	1·04	·489	9	·260	·99
20·473	8	55·032	1·93	·235	2	·908	1·03	·515	9	·265	·95
·489	8	·035	1·79	·239	2	·909	1·01	9300·386	8	127·483	·99