

BGC	Name	R. A.	Decl.	1900 +	P. A.	Dist.	Mags.	N	Remarks
		^{h m}	^{° '}		[°]	^{''}			
6530	Σ1757	13 29	+ 0 12	19.40	86.9	2.71	8.0...8.7	3	
				22.42	87.4	2.68	8.0...8.7	2	
				23.49	86.8	2.62	7.8...8.5	1	
				25.37	88.9	2.58	8.0...8.6	4	
				19.40	151.4	43.48	...12.0	2	A and C
				22.38	149.5	43.64		1	A and C
6566	Σ1768	13 33	+ 36 48	22.42	120.0	1.56	5.0...7.8	2	− 0°.3 + 0''.20 ¹
				23.36	119.4	1.54	5.0...7.5	3	− 0.5 + 0.17
				24.58	119.6	1.53		1	+ 0.2 + 0.14
				25.37	118.4	1.68	5.2...7.4	4	− 0.7 + 0.25
6599	Σ1777	13 38	+ 4 03	22.34	230.2	3.25	6.0...8.5	3	
				25.39	230.8	3.27	6.0...8.5	3	
6641	Σ1785	13 45	+ 27 29	21.40	13.7	1.14	7.0...7.2	5	+ 2°.4 − 0''.22 ¹
				22.35	20.8	1.21	6.8...7.1	4-3	+ 5.2 − 0.15
				23.37	27.6	1.14	7.0...7.1	4-3	+ 7.4 − 0.22
				25.35	41.8	1.10	7.0...7.2	7	+12.6 − 0.26
6955	Σ1865	14 36	+ 14 09	21.39	137.7	0.94	4.6...4.5	4	+ 0°.5 + 0''.08 ⁸
				22.36	136.5	1.04	4.6...4.5	4	− 0.4 + 0.16
				23.43	135.9	1.04	4.5...4.5	6	− 0.7 + 0.14
				24.50	136.9	0.95	4.5...4.5	4	+ 0.6 + 0.04
				25.44	135.7	1.05	4.6...4.5	5	− 0.3 + 0.12
7049	OΣ 288	14 49	+ 16 07	22.03	185.3	1.72	6.5...7.3	3	
				23.52	185.2	1.55	6.3...7.2	3	
				24.50	186.3	1.58	6.5...7.2	3	
				25.43	186.6	1.75	6.5...7.3	3	

¹Jackson, N. N. 80.²Aitken, L. O. B. 316⁴Doberck, A. N. 173³Rabe, A. N. 216.⁵Schœnberg, A. N. 178⁶Norlund, A. N. 170⁸Hertzsprung, A. N. 203, p. 393*Minneapolis, Minn.,
July 5, 1925.*⁷Doberck, A. N. 177

OBSERVATIONS OF ASTEROIDS AT THE YERKES OBSERVATORY,

By G. VAN BIESBROECK AND O. STRUVE.

(Fourth Series.)

According to our previous program (*A. J.* 822, 833, 842) we have continued to follow with the 24-inch reflector the faint asteroids in need of observation. The only modification in the work since the last publication consisted in the adoption, beginning 1924, Oct. 7, of the EASTMAN "Speedway" plates as a fast emulsion that is easier to secure than the one formerly used. The magnitudes given are photographic, on the international scale as deduced by comparison with a plate on the polar sequence exposed for 20 minutes, the

same time being uniformly adopted for the asteroid plates. This exposure time brings out objects of the 16th magnitude or even fainter under good conditions. This explains why most of the magnitudes given here make the objects fainter than is given in the "Oppositions-Ephemeriden" in which a visual scale seems to have been used. The list of objects that were not found within the limits of the small field covered by the reflector — a square of $1\frac{3}{4}$ degrees on the side — is again a long one but there is a compensation in the

faintness of the objects reached. Unless otherwise indicated the positions have been compared with the "Oppositions-Ephemeriden" published by the Rechen-

institut. Under Date is understood the Greenwich Mean Time up to Dec. 31, 1924; from Jan. 1, 1925 the Greenwich Civil Time is used.

Asteroid	Date	1925.0 h m s	1925.0 ° ' "	Mag. m	Obs.	O. - C. m	Rem.	
104 <i>Klymene</i> 1924	Sept. 23.784	0 3 19	- 2 52.4	11.8	VB	+3.7	+27	
	Sept. 25.630	0 1 53	- 3 0.2	...	VB	+3.7	+27	
	Sept. 30.670	23 58 1	- 3 20.8	11.5	VB	+3.6	+26	
279 <i>Thule</i> 1924	Nov. 19.702	2 59 59	+15 41.1	14.1	VB	-0.5	- 2	1
	Nov. 24.661	2 57 0	+15 30.5	14.7	S	-0.5	- 3	
284 <i>Amalia</i> 1925	Mar. 23.246	12 18 4	-13 10.6	14.1	VB	+0.1	0	
	Mar. 25.241	12 16 12	-12 55.7	13.7	S	+0.1	0	
	Mar. 25.244	12 16 14	-12 55.7	...	VB	+0.1	0	
	Mar. 28.239	12 13 24	-12 31.9	13.8	S	+0.1	0	
291 <i>Alice</i> 1924	Aug. 26.747	22 19 7	-10 3.3	15.3	S	-0.1	- 3	
	Sept. 2.778	22 11 56	-10 44.7	15.5	S	-0.2	- 1	
298 <i>Baptistina</i> 1924	Sept. 4.838	0 10 37	- 1 39.2	15.2	VB	+1.1	+13	
	Sept. 30.783	23 44 35	- 3 14.0	15.4	S	+1.2	+14	
399 <i>Persephone</i> 1924	Sept. 30.666	23 28 41	+ 0 16.9	13.4	S	+0.1	0	
	Oct. 5.716	23 24 55	+ 0 6.8	13.5	VB	0.0	0	
548 <i>Kressida</i> 1924	June 29.827	19 31 16	-21 33.4	14.8	VB	-0.4	- 1	2
588 <i>Achilles</i> 1924	Aug. 27.668	20 33 43	-19 54.5	15.1	VB	0.0	0	3
	Aug. 28.702	20 33 17	-19 55.2	...	S	0.0	0	
624 <i>Hector</i> 1924	Aug. 27.706	20 53 12	-29 1.0	14.8	VB	0.0	0	4
	Aug. 28.727	20 52 41	-29 0.1	...	S	0.0	0	
816 1916 <i>YV</i> 1924	Oct. 22.782	1 8 6	-13 16.0	15.6	VB	-2.5	-13	
	Oct. 23.763	1 7 24	-13 19.3	15.8	S	-2.5	-12	
823 <i>Sisigambis</i> 1924	Oct. 21.684	0 44 35	+10 33.8	13.7	S	-1.0	- 5	
	Oct. 23.795	0 42 50	+10 18.6	14.0	S	-0.8	- 4	
873 1917 <i>CA</i> 1925	Mar. 26.236	10 35 57	+10 37.2	14.0	VB	+2.1	-53	21
	Mar. 27.241	10 35 25	+10 43.2	14.0	VB	+2.1	-52	
874 1917 <i>CC</i> 1924	Sept. 4.787	23 47 56	+ 3 57.0	15.0	VB	+0.9	0	
	Sept. 23.747	23 35 30	+ 1 49.7	15.3	S	+0.9	- 2	
884 <i>Priamus</i> 1925	May 15.117	13 14 9	-20 18.1	15.6	S	-0.8	-37	8
	May 19.136	13 12 18	-19 59.7	15.4	S	-1.0	-34	
894 1918 <i>DT</i> 1924	Aug. 2.705	19 57 12	- 2 3.0	12.9	VB	+1.5	+ 1	
897 1918 <i>DZ</i> 1925	Mar. 20.204	10 28 50	-14 43.0	14.7	VB	+0.1	+ 1	
	Mar. 23.188	10 26 36	-14 20.6	...	VB	+0.1	+ 1	
915 1918 <i>b</i> 1924	July 24.759	21 25 50	-24 4.5	15.6	S	-1.0	+ 2	10
	Aug. 6.754	21 13 43	-24 55.0	15.3	S	+0.1	+ 2	
933 1920 <i>GZ</i> 1925	May 18.270	15 44 2	-24 26.7	13.4	VB	+0.9	- 8	
	June 14.155	15 18 23	-24 49.1	13.8	VB	+0.9	- 7	
937 1920 <i>HO</i> 1924	Dec. 20.883	6 50 19	+19 43.0	15.6	VB	+2.2	- 2	11
946 1921 <i>IC</i> 1924	Sept. 4.838	0 12 31	- 0 49.3	15.7	VB	+1.4	+ 8	
	Sept. 30.728	23 54 3	- 2 48.2	15.7	S	+1.4	+ 9	
953 1921 <i>IT</i> 1925	Feb. 27.353	11 11 34	+16 45.4	14.1	S	0.0	- 1	12
959 1921 <i>KF</i> 1924	Apr. 1.761	12 1 0	+ 5 31.0	15.6	VB	+1.2	- 7	2
982 <i>Franklina</i> 1924	Dec. 1.86105	5 31 25.12	+35 10 20.0	16.1	VB	+2.4	- 5	14
	Dec. 19.69736	5 14 11.08	+34 26 2.3	15.0	S	+2.4	- 4	
	Dec. 20.81802	5 13 7.60	+34 22 10.6	...	VB	+2.3	- 4	
	Dec. 24.67366	5 9 36.53	+34 8 7.1	15.1	VB	+2.3	- 4	
984 1922 <i>MH</i> 1925	Mar. 25.241	12 13 51	-12 39.9	13.5	S	-0.3	+ 2	
	Mar. 28.239	12 11 20	-12 28.3	13.5	S	-0.4	+ 2	

Asteroid	Date	1925.0 h m s	1925.0 ° ' "	Mag. m	Obs.	O. - C. m	Rem.
1925AJ 986 <i>Amelia</i>	1925 Mar. 25.209	12 2 47	+21 6.4	15.9	S	+0.1	-10
992 1922 <i>ND</i>	1925 Mar. 31.354	13 49 8	-14 24.6	15.6	S	+0.2	-6
	Apr. 28.248	13 30 4	-10 44.2	15.6	S	+0.2	-4
997 1923 <i>NR</i>	1924 Nov. 27.713	4 26 16	+21 44.0	16.4	VB	-1.8	+1 15
999 1923 <i>NW</i>	1925 Jan. 17.226	7 20 15	+7 46.3	15.8	S	-0.9	+2
	Jan. 20.201	7 17 31	+7 53.3	16.0	S	-0.9	+2
1006 1923 <i>OU</i>	1925 Feb. 18.19480	9 23 3.68	+8 52 34.5	16.2	S	-0.1	+1
	Feb. 27.27188	9 15 54.34	+9 13 57.2	16.2	S	-0.2	+1
1007 1923 <i>OX</i>	1925 Feb. 18.23194	9 35 22.07	+13 12 22.7	15.2	S	+1.6	-9
	Feb. 27.30243	9 27 35.46	+13 43 25.0	15.2	S	+1.4	-9
1008 1923 <i>PD</i>	1925 Jan. 17.13391	6 24 47.93	+36 16 21.1	14.9	S	0.0	+1
	Jan. 20.16169	6 22 28.35	+36 12 49.2	14.7	S	0.0	+1
1010 1923 <i>PF</i>	1925 Jan. 21.18479	9 21 39.24	+18 41 5.0	15.2	VB	-0.2	+1
1024 <i>YO</i> 13	1925 Jan. 21.26172	9 52 41.23	+36 8 13.4	15.3	VB	...	...
	Feb. 28.18053	9 16 20.35	+38 36 49.7	14.4	S	+0.7	-2
1923 <i>NT</i> = <i>Polomac</i>	1925 Jan. 10.996	4 44 16	+16 32.4	...	VB	...	...
1924 <i>RT</i>	1924 Aug. 2.65366	18 15 24.00	-13 53 8.8	13.4	VB	...	...
1924 <i>SN</i>	1924 Sept. 23.74741	23 34 23.63	+1 46 33.4	14.7	S	...	...
	Sept. 30.65140	23 29 10.77	+1 2 3.0	15.1	S	...	...
	Oct. 5.71620	23 26 3.33	+0 38 13.4	15.2	VB	...	...
	Oct. 21.66526	23 18 36.50	-0 22 2.9	15.6	S	...	...
	Oct. 24.62990	23 17 48.59	-0 33 0.6	...	S	...	...
	Nov. 2.69654	23 16 39.86	-0 59 7.6	16.2	VB	...	...
1924 <i>SS</i>	1924 Nov. 19.620	0 9 23	+8 11.8	14.6	VB	...	...
	Nov. 30.673	0 16 52	+8 24.9	15.2	VB	...	...
1924 <i>SV</i>	1924 Nov. 30.6343	0 12 0.75	-1 43 56.9	16.1	VB	...	...
1924 <i>SW</i>	1924 Nov. 14.49168	0 21 5.80	+12 25 28.8	15.9	S	...	...
	Dec. 27.57358	0 29 55.69	+14 21 13.1	15.7	S	...	...
1924 <i>TG</i>	1924 Nov. 19.702	3 0 19	+15 10.6	13.4	VB	...	...
	Nov. 24.661	2 56 13	+15 14.8	13.3	S	...	...
1925 <i>BE</i>	1925 Apr. 16.09942	8 46 10.81	+18 57 17.6	16.5	VB	...	...
	Apr. 24.13733	8 50 28.17	+18 38 42.2	16.2	VB	...	...
<i>Y.O.</i> 11	1925 Jan. 18.21861	10 11 35.63	+13 6 33.8	15.1	VB	...	17
	Jan. 18.23653	10 11 34.93	+13 6 37.9	14.8	VB	...	...
	Feb. 28.12567	9 42 18.13	+15 33 35.0	14.8	S	...	...
	Mar. 15.15469	9 33 3.68	+16 9 1.3	15.6	VB	...	...
<i>Y.O.</i> 19 = 1924 <i>SM</i>	1924 Sept. 4.78707	23 45 3.93	+3 46 7.5	14.0	VB	...	18
	Sept. 5.80561	23 44 26.14	+3 38 44.2	...	VB	...	...
	Sept. 22.63891	23 33 6.74	+1 20 7.6	14.4	VB	...	...
	Sept. 30.68228	23 27 54.37	+0 10 56.0	14.7	S	...	...
	Oct. 7.80973	23 23 53.60	-0 47 33.6	...	S	...	...
	Oct. 16.56551	23 20 8.22	-1 52 12.3	15.4	VB	...	...
	Oct. 21.62755	23 18 39.48	-2 24 25.9	15.2	S	...	...
	Nov. 1.70091	23 17 26.31	-3 20 6.8	...	S	...	...
	Nov. 18.61737	23 21 5.04	-4 1 55.1	16.0	VB	...	...
<i>Y.O.</i> 20 = 1924 <i>TR</i>	1924 Nov. 19.72284	3 12 49.31	+18 13 58.5	14.7	VB	...	...
	Nov. 30.71138	3 3 3.05	+17 32 20.7	15.1	VB	...	...
	Dec. 15.49249	2 55 7.71	+16 55 19.6	15.5	VB	...	...
	Dec. 24.58362	2 54 7.25	+16 48 48.0	15.7	VB	...	...
	1925 Jan. 14.02767	3 2 28.09	+17 19 44.8	...	VB	...	...
	Feb. 18.04480	3 44 40.19	+19 49 39.7	16.8	VB	...	...
	Feb. 18.06841	3 44 42.32	+19 49 44.7	16.8	VB	...	...

Asteroid	Date	1925.0 h m s	1925.0 ° ' "	Mag. m	Obs.	O. - C. m	Rem.
Y.O. 21	1924 Nov. 24.75965	3 51 20.4	+28 21.1	13.9	S	...	19
	Nov. 30.73964	3 45 14.3	+28 25.8	13.3	VB	...	
Y.O.22=1924 UA	1924 Dec. 1.86105	5 27 56.02	+34 26 6.5	15.3	VB	...	20
	Dec. 15.59397	5 13 44.58	+34 32 33.5	...	VB	...	
	Dec. 20.81802	5 8 23.45	+34 28 10.2	...	VB	...	
	Dec. 24.67366	5 4 38.09	+34 22 36.2	14.2	VB	...	
	1925 Jan. 30.24358	4 46 59.96	+32 46 25.3	...	VB	...	
	Jan. 30.26979	4 47 0.07	+32 46 19.3	...	VB	...	
	Feb. 12.08456	4 50 1.48	+32 13 42.2	14.9	VB	...	
	Feb. 27.11609	4 59 5.80	+31 43 48.3	15.1	VB	...	
	Mar. 15.08073	5 14 6.33	+31 19 54.9	15.9	VB	...	
	Mar. 15.09045	5 14 6.99	+31 19 54.4	16.1	VB	...	
	Mar. 29.10526	5 30 49.00	+31 1 33.1	16.8	VB	...	
	Mar. 29.11741	5 30 49.81	+31 1 31.5	16.6	VB	...	

MISSING ASTEROIDS

262	1925 Apr. 26	
310	1924 Sept. 2	
314	1924 Aug. 2	
461	1925 Apr. 26	
493	1924 Sept. 5	
594	1924 Oct. 5, Oct. 24	
630	1925 June 16	
637	1925 June 16	
685	1925 Mar. 23	
703	1925 Apr. 26; Apr. 28	
728	1924 Oct. 26	
743	1924 July 28.	Rem. 5
749	1924 Oct. 21	
777	1924 Nov. 24	
789	1924 Nov. 19	
819	1924 Nov. 24; Nov. 30	
822	1924 Aug. 26	
846	1925 May 25.	
850	1924 Dec. 1	
865	1925 Apr. 26.	Rem. 6
880	1925 Mar. 15	
883	1924 Nov. 30.	Rem. 7
885	1925 Mar. 15.	Rem. 9
916	1925 Mar. 31	
922	1924 Dec. 1	
935	1925 Jan. 21	
949	1924 Oct. 26	
958	1925 May 15	
959	1925 May 15	
979	1925 Jan. 17, Jan. 31.	Rem. 13
981	1925 Feb. 17	
985	1925 May 25	
989	1925 June 19	
990	1925 Apr. 26	
991	1924 Feb. 28.	Rem. 15
1000	1924 Oct. 21	
1012	1925 May 18	
1014	1925 June 16	
1020	1925 June 18	
1925LA	1925 July 18.	Rem. 16

REMARKS

1. Ephemeris: *B. Z.* 30.
2. Found subsequently to last year's announcement as "missing."
3. Ephemeris: *Bulletin de l'Institut Astronomique*, LENINGRAD. No. 1.
4. Ephemeris: *Bulletin de l'Institut Astronomique*, LENINGRAD. No. 1.
5. Ephemeris: *B. Z.* 18.
6. Observed by M. WOLF (*B. Z.* 22.) with correction $-0^m.7$; $+1'$, $14^m.3$. No object was found in this place on our plates of April 26.
7. According to *Circ. de L'Obs. de Marseille* 319 COMAS SOLA gives $+1^m.2$ and $+33'$ for the correction. No moving object brighter than 16^m could be found in this corrected place. COMAS SOLA's identification is probably erroneous.
8. Ephemeris: *B. Z.* 16. Identity questionable.
9. Ephemeris: *B. Z.* 7.
10. In *Circ. Marseille* 312 ALGERS gives the correction $+0.3$, $+2'$ ($13^m.7$) Identity doubtful.
11. The object is missing on a pair of good plates 1925 Jan. 17. Identity doubtful.
12. The observed object is evidently the same for which BELIAVSKY gives $-0^m.1$, $0'$ on Mar. 2. (*B. Z.* 12) But good plates on Mar. 23 and Mar. 25 do not show it again.
13. Missing also in *B. Z.* 37 position.
14. On account of its faintness the identity of *Y. O.* 23 with 982 *Franklina* was not recognized. Elements computed at Berkeley (*L. O. B.* 359) establish the identity.
15. Ephemeris: *B. Z.* 33.
16. Ephemeris supplied by DR. STRACKE.
17. Ephemeris: *L. O. B.* 358.
18. Independently found in Simeis on Sep. 5.
19. This object is probably identical with 520 *Franziska*.
20. Independently found by M. WOLF on Dec. 26. Preliminary orbit in *L. O. B.* 359 was used in following the object.
21. According to a letter from DR. STRACKE (Berlin) these observations belong to 191 *Kolga*.

Williams Bay, Wis.,
Aug. 1, 1925.

CONTENTS.

MEASURES OF DOUBLE STARS, BY F. P. LEAVENWORTH.

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