BULLETIN OF THE ASTRONOMICAL INSTITUTES OF THE NETHERLANDS.

1926 September 30 Volume III. No. 107.

COMMUNICATIONS FROM THE OBSERVATORY AT LEIDEN.

New Southern Double Stars, first list, by *W. H. van den Bos.*

In publishing the first list of new double stars found in the systematic survey of the southern sky a short description of the methods used will be desirable.

When I arrived at Johannesburg in the last week of August 1925, the 26½ inch refractor had been used by Dr. INNES and Mr. FINSEN for some months in searching for double stars. These searches, like the earlier ones made by INNES at the Cape and Union Observatories, were not of a systematic character, but consisted in sweeping the sky with the four inch finder. After a month of this sweeping, as well as measuring known double stars, so as to get acquainted with the instrument, I started a systematic search, which when completed will supplement the Lick survey of AITKEN and HUSSEY as far as the difference in optical power of the instruments used will permit. The *Cape Photographic Durchmustering* was adopted as the basis of the survey. This has the disadvantage, that the Lick Survey extends to stars of the visual magnitude 9·0 *B. D.* and the Johannesburg survey to the magnitude 9·0 *C. P. D.* which is more or less a photographic magnitude adjusted to the visual scale. It was therefore decided to add those stars fainter than 9·0 for which the Gould magnitude, given in the last column of the *C. P. D.*, did not exceed 9·0. With this precaution it does not seem likely that statistical conclusions drawn from the results of this survey will be perceptibly affected; in any case it will be possible to reduce to 9·0 visual magnitude by discarding the fainter white stars.

It was decided that I should search the first volume of the *C. P. D.*, zones — 19° to — 37°, omitting the incomplete zone — 18°, Dr. INNES the second, — 38° to — 51°, and Mr. FINSEN the third, — 52° to South pole. I started at — 23°, which is the most northern zone that can be searched with the full aperture and the dome turned to the south, going southward. Searches were exclusively made under good conditions, estimated seeing at least 4 in a scale where 5 stands for perfect seeing. At Johannesburg the percentage of such nights is so satisfactory for the zones near the zenith, that two or three years wil be sufficient to complete the part of the sky assigned to me.

In addition, on Dr. AITKEN's advice, the zone — 18° and perhaps a few more northern zones will be searched, so as to complete and slightly overlap the Lick survey.

A list is kept up to date giving the zones searched, the number of stars looked at, the number of double stars within the limits defined by AITKEN (distance up to 5″ for magnitude 6·0 to 9·0, 10″ for 4·0 to 5·9. etc.), and the number of new discoveries. This list may be used for statistical work when the survey has been completed. At present the percentage agrees closely with the Lick survey; one star in every eighteen is a double.

Not counted as new discoveries are wider companions to known doubles, even if they are within AITKEN's limits. These stars are only added in INNES' *Catalogue* and do not receive a special number. If, however, the new companion is closer, it is regarded as a new discovery.

One star in every thirty-two is a new double.

This does not include stars discovered by INNES and FINSEN in random searches in my zones.

Of course some pairs exceeding AITKEN's limits and not listed previously have been found. I have not thought it advisable in the present state of southern double star astronomy to reject these pairs altogether, though they are of course counted as single stars in the statistical list. The same applies to stars fainter than 9·0 magnitude accidentally picked up. The stars have been numbered in order of right ascension, starting with 0 hours. This first list contains only the discoveries from 0—15 hours; the numbering proceeds when the next hour has been abandoned for the present year.

The following data are given below: the VAN DEN BOS number (starting with B 3 *), the *C. P. D.* number, right ascension and declination for 1900, approximate position angle and distance, magnitudes based on the *H. D.* and estimated difference (or direct estimates for faint companions), and the spectral class, also taken from the *H. D.*

It is intended to publish detailed measures of these, as well as of known pairs, later on.

*) B 1 and B 2 were discovered at Leiden, and published in *Leiden Annals*, XIV, 3, $13^h11^m27^s.3$ and $21^h0^m31^s$.

B.	C.P.D.	1900 α	1900 δ	θ	ρ	mag.	spec.	Remarks
	°	h m s	° ′	°	″			
3	24·2	0 1 31	−23 58	52	6·6	10·0 , 13·2	Go	
4	25·21	10 31	24 54	208	0·7	9·8 , 10·3	Go	
5	25·42	23 5	25 45	250	0·8	9·6 , 12·8	F8	AB
				237	26·5	9·6 , 12·0		AC
6	19·44	26 15	19 42	58	0·2	10·3 , 10·3	Fo	
7	63·50	26 58	63 31	148	2·2	4·5 , 14	B9	
8	63·52	28 10	63 35	143	0·1	5·7 , 6·1	A2	
9	24·54	30 58	24 21	97	1·3	10·1 , 13·4	A3	
10	25·76	36 45	25 18	175	0·2	8·8 , 9·4	G5	
11	44·96	41 37	44 36	33	1·8	9·8 , 11·7		
12	25·88	43 8	25 37	102	4·8	8·3 , 13·0	G5	
13	24·78	44 18	24 41	167	8·9	6·1 , 13·5	G5	
14	23·110	49 45	23 0	107	0·3	10·0 , 10·5		
15	24·111	59 46	24 21	312	0·7	10·2 , 10·5		
16	28·104	1 13 0	28 43	269	39·3	9·0 , 11·7	Ko	AB
				318	3·9	11·7 , 11·7		BC
				36	15	9·0 , 16		AD
17	23·170	19 20	23 17	63	0·4	9·4 , 10·2		
18	25·150	19 48	25 50	287	0·3	8·7 , 9·1	A2	
19	31·182	24 7	30 55	163	0·6	9·6 , 12·6	G5	
20	26·136	27 4	26 2	26	0·3	10·5 , 10·8	Go	
21	23·196	34 26	23 38	264	2·5	8·5 , 12·4	F8	
22	23·202	38 44	23 40	294	5·5	9·6 , 10·5	Go	
23	19·192	49 10	19 29	132	4·4	9·3 , 13·8	Go	
24	33·197	54 4	33 33	122	6	6·3 , 13·5	G5	
25	28·177	55 15	27 57	74	1·1	9·2 , 12·5	G5	
26	30·229	55 57	30 16	288	4·2	10·3 , 13·1	F8	
27	28·194	2 2 42	28 17	27	1·0	8·8 , 12·1	G5	
28	26·200	6 28	25 55	314	2·3	8·5 , 14·5	Go	
29	24·253	8 25	24 4	310	3·7	9·4 , 11·0	F8	
30	28·206	8 41	28 21	277	1·3	10·5 , 11·6	F5	
31	23·248	11 3	23 4	62	3·5	9·1 , 15	F8	
32	30·268	11 6	29 53	226	4·6	9·0 , 12·5		
33	29·253	11 22	29 7	94	4·9	9·5 , 12·8	Ko	
34	30·275	14 11	30 8	31	1·4	8·5 , 9·5	F5	
35	57·432	19 42	57 18	230	0·4	9·8 , 11·0		
36	25·285	26 21	25 7	232	0·8	9·3 , 12·1	G5	
37	58·216	26 36	58 15	140	0·2	9·9 , 10·7		
38	28·231	27 10	27 57	251	1·0	7·6 , 10·2	A2	
39	29·309	37 37	28 58	82	2·9	8·5 , 12·5	Ko	
40	26·252	38 47	26 22	221	0·9	8·9 , 11·8		
41	25·336	47 24	25 27	222	2·5	10·0 , 11·2		
42	25·361	56 26	25 2	192	12·5	9·4 , 11·0	F5	AB
				269	2·9	11·0 , 13·3		BC
43	25·367	57 28	25 10	218	2·2	19·9 , 11·4	F5	
44	25·381	3 1 36	25 32	49	0·3	9·3 , 9·7	Ko	
45	26·327	7 8	25 55	23	7·0	9·2 , 10·3	Go	
46	25·404	11 28	25 32	97	1·2	8·2 , 13·7	Ko	
47	25·413	14 25	25 47	313	4·3	8·7 , 10·8	G5	
48	31·384	15 53	31 30	90	1·7	8·9 , 14	F8	
49	54·556	22 23	54 7	69	4·1	9·6 , 11·4		
50	56·542	27 25	56 15	202	0·6	9·8 , 10·0	Fo	
51	23·379	29 17	23 17	232	2·5	8·3 , 14·4	F2	
52	31·412	29 56	31 25	311	0·2	6·7 , 7·3	F5	
53	32·388	30 33	32 12	222	1·4	6·5 , 10·0	Ko	

B.	C.P.D.	1900 α	1900 δ	θ	ρ	mag.	spec.	Remarks
	°	h m s	° ′	°	″			
54 [1])	23·394	3 36 7	−23 14	245	1·2	10·2 , 10·3	Go	
55 [1])	23·398	36 58	23 13	245	1·4	10·6 , 10·7	F8	
56	32·408)	38 6	31 55	28	1·2	9·7 , 13·0	Go	AB
	407)			183	28·4	9·7 , 10·5		AC
57	27·395	45 50	27 47	91	1·6	9·6 , 11·6	Go	
58	26·425	47 10	26 14	212	34·7	10·4 , 12·7	F5	AB
				200	3·0	12·7 , 13·0		BC
59	28·429	52 19	28 17	241	3·9	9·9 , 10·9	G5	
60	26·441	52 47	26 38	140	0·7	10·2 , 10·4		
61	29·477	55 24	29 3	354	0·2	8·8 , 8·8	F5	
62	24·516	4 0 41	24 41	61	1·9	9·3 , 10·2	G5	
63	27·471	7 45	27 47	38	1·4	10·5 , 13·0		
64	24·558	11 44	24 15	227	3·7	8·2 , 11·8	F2	
65	28·528	21 21	28 9	251	4·4	10·3 , 10·4		
66	28·530	21 29	28 3	178	2·1	9·7 , 11·7		
67	23·531	23 18	23 26	262	0·9	10·2 , 10·5		
68	30·600	24 38	29 58	103	0·1	8·5 , 8·8	Fo	
69	25·609	24 45	25 24	353	2·3	7·7 , 14	G5	
				351	6·9	7·7 , 9·4		= Stone 8
70	27·580	32 32	27 15	70	1·4	7·2 , 11·7	F5	
71	27·585	32 50	27 46	254	2·7	10·0 , 13·5		
72	30·639	33 43	30 6	94	4·8	8·0 , 14	F5	
73	26·586	34 18	26 24	45	0·4	9·3 , 10·2	Fo	
74	31·589	37 41	31 0	10	2·2	9·1 , 12·1	Go	
75	25·725	48 43	25 31	257	68·5	8·5 , 11·5	K2	
				138	4·0	11·5 , 13·0		
76	25·749	54 21	25 11	228	1·1	9·7 , 13·7	Fo	
77	26·680	57 17	26 54	68	0·4	9·6 , 11·2	F5	
78	25·833	5 6 32	25 20	9	2·4	10·1 , 14·5	F2	
79	24·847	6 56	24 34	234	5·6	8·7 , 11·3	Ao	
80	26·732	8 20	26 40	10	1·3	8·0 , 12·0	Go	
81	24·862	8 56	24 5	293	2·3	8·6 , 13·1	Ko	
82	25·877	12 15	25 5	113	1·5	11·0 , 12·8		
83	23·770	13 21	23 57	108	0·8	(9·4) [2])	Go	
84	24·1014	33 6	24 28	250	3·2	7·9 , 13·2	F2	
85	24·1017	33 36	24 11	271	1·3	7·9 , 12·4	F2	
86	25·1036	36 49	25 49	347	3·1	9·0 , 12·5		
87	24·1037	36 58	24 23	337	1·1	9·5 , 11·5		
88	26·808	40 8	26 32	176	2·0	10·2 , 10·8		
89	25·1068	42 56	25 44	256	0·9	8·9 , 11·2	F8	
90	25·1075	44 45	25 9	113	0·2	9·7 , 10·0	Go	
91	23·945	47 50	23 54	305	1·7	10·9 , 11·8	F5	
92	25·1122	50 46	25 27	310	7·3	8·9 , 11·4	Go	AB
				130	29·7	8·9 , 11·8		AC
				126	0·9	11·8 , 12·5		CD
93	24·1138	51 21	24 17	257	6·6	9·5 , 10·6	A5	
94	26·1011	52 33	26 32	299	0·3	8·7 , 8·9	Fo	
95	25·1159	54 33	25 9	73	85·0	9·2 , 12·0	Ko	
				4	2·8	12·0 , 12·8		
96	26·1077	59 14	26 17	130	2·2	5·2 , 14	G5	AC = λ 59
97	25·1215	59 45	25 14	76	1·5	9·3 , 14·3	Ao	

[1]) B 54 and B 55 are strikingly similar.
[2]) Difference of magnitudes not recorded.

B.	C.P.D.	1900 α	1900 δ	θ	ρ	mag.	spec.	Remarks
	°	h m s	° ′	°	″			′ m
98	25·1244	6 2 35	−25 55	272	2·0	10·2 , 10·7		2 S of 1242 , 8·3 F8
99	25·1260	4 5	25 24	26	1·2	7·5 , 11·5	A2	
100	25·1284	5 53	25 36	108	2·2	7·4 , 12·4	F8	
101	23·1090	6 4	23 43	206	2·3	9·5 , 10·5		
102	23·1093	6 21	23 11	97	1·1	9·8 , 12·9		
103	23·1096	6 23	23 10	84	2·0	9·5 , 14·5	Ao	
104	25·1313	8 14	25 13	192	0·6	8·3 , 8·6	Fo	
105	26·1163	8 24	26 35	246	4·6	9·8 , 11·8		
106	25·1335	9 43	25 49	115	0·2	9·7 , 10·0	A2	
107	24·1317	10 35	24 23	39	1·5	8·8 , 11·6	Ko	
108	24·1322	11 5	24 22	303	0·2	9·6 , 10·1	A2	
109	24·1323	11 12	24 30	299	0·8	9·4 , 10·2		
110	24·1344	13 30	24 24	50	6·7	7·3 , 11·0	F5	
111	23·1214	18 44	23 59	175	0·5	9·5 , 11·0		
112	23·1223	19 32	23 9	290	1·6	8·9 , 11·4	F5	
113	25·1427	21 9	25 35	81	0·3	9·7 , 10·2		
114	25·1445	23 21	25 40	294	0·4	9·6 , 9·8	Ko	
115	24·1544	31 0	24 20	203	0·4	9·4 , 10·9	A5	
116	23·1406	36 20	23 5	165	4·9	10·2 , 12·0	A2	
117	23·1460	40 44	23 45	333	0·7	8·9 , 10·7	Ko	
118	25·1616	41 3	25 44	106	6·6	9·2 , 14	Ao	
119	23·1483	43 26	23 45	104	2·6	10·0 , 11·0	A3	
120	25·1670	45 4	25 57	280	2·1	7·4 , 10·4	K2	
121	23·1632	52 54	23 37	252	0·5	9·4 , 10·9	Fo	
122	24·1798	53 25	24 30	272	0·9	5·6 , 7·0	F5	Boss 1799
123	23·1661	54 24	23 10	330	1·3	10·9 , 11·2	B9	
124	25·1786	54 30	25 17	62	10·0	5·7 , 12·5	B3	
125	23·1690	55 47	23 49	128	0·4	11·0 , 11·0	Ao	
126	27·1648	57 45	27 47	152	11·3	3·7 , 14	K5	σ CMa
127	24·1873	58 4	24 7	184	2·3	10·0 , 13·3	G5	
128	23·1759	59 32	23 41	338	4·7	11·0 , 12·0	B9	
129	24·1937	7 1 35	24 36	132	1·5	9·8 , 10·2		
130	23·1855	4 32	23 34	127	3·0	9·6 , 13·4		
131	23·1966	9 51	23 31	39	2·8	7·5 , 14·5	Ko	
132	26·1912	10 32	26 34	190	1·8	9·3 , 10·8		near ω CMa
133	24·2248	15 5	24 46	99	4·4	7·3 , 14·5	B3	
134	24·2250	15 8	24 42	100	1·0	9·5 , 12·0		
135	23·2077	15 42	23 15	166	4·9	10·7 , 13·5	Ao	
136	24·2453	24 14	24 56	100	0·8	8·8 , 13·8	Ko	
137	23·2304	25 11	23 43	226	5·6	9·5 , 15	A	
138	24·2541	29 39	24 32	322	4·4	9·5 , 12·0	Ko	
				132	9·0	9·5 , 14		
139	27·2197	31 18	27 54	278	0·3	9·8 , 10·2	Ao	
				324	4·5	9·3 , 13·4		
140	23·2634	37 40	23 23	183	1·7	8·5 , 10·8	B9	
141	24·2718	37 44	24 45	297	1·5	10 0 , 10·5		
142	23·2720	39 47	23 59	281	2·6	9·6 , 12·6	K2	
143	23·2756	40 16	23 13	142	4·7	10·7 , 14·7	A2	
144	23·2847	41 24	23 16	178	3·7	9·5 , 14·0		
145	23·2978	45 24	23 35	152	0·9	9·8 , 10·3		
146	24·2966	46 47	24 16	53	1·2	6·4 , 10·4	Ao	
147	24·3285	59 54	24 22	117	1·3	10·4 , 10·5	Ao	
148	26·3031	8 2 38	26 51	136	2·4	9·6 , 12·4		
149	23.3385	4 2	23 20	310	4·2	6·6 , 14·0	B5	
150	24·3397	6 6	24 47	37	0·5	10·6 , 11·2	A5	

B.	C.P.D.	1900 α	1900 δ	θ	ρ	mag.	spec.	Remarks
	°	h m s	° ′	°	″			
151	23·3480	8 9 19	−23 37	277	0·4	10·0 , 10·5		near Hd 114
152	23·3643	15 37	23 59	329	5·9	9·5 , 10·1		
153	24·3575	16 33	24 49	329	0·6	8·7 , 9·2	Ao	
154	23·3701	17 48	23 6	91	0·4	8·9 , 10·4	Ao	
155	23·3796	22 38	23 6	62	2·2	10·5 , 11·5		
156	25·3676	24 43	25 14	357	0·3	9·2 , 9·5	B9	
157	25·3685	25 2	25 18	203	5·9	10·8 , 10·9	A2	
158	25·3707	26 4	25 42	40	0·3	8·8 , 9·2	Go	AB, C (3706) = S 569
159	23·3906	28 42	23 21	202	5·1	10·2 , 10·4		
160	23·3990	33 11	23 57	233	2·0	9·5 , 12·5		
161	24·3779	34 15	24 41	316	8·2	9·3 , 10·5	F5	
162	23·4011	35 0	23 27	290	0·3	9·5 , 11·0	F8	
163	28·3360	39 2	28 19	140	5·7	7·9 , 14·0	Ko	
164	24·3816	39 20	24 44	202	1·7	9·9 , 11·1	F8	
165	24·3817	39 21	24 21	332	0·2	9·0 , 9·4	Fo	
166	26·3587	39 29	26 17	63	2·3	8·0 , 12·8	A3	
167	28·3434	47 3	28 34	43	4·6	10·8 , 12·1	A2	
168	24·3887	51 26	25 2	316	0·4	9·7 , 10·2	Ao	
169	25·3950	51 37	25 52	297	0·3	8·5 , 10·7	Fo	
170	24·3893	52 3	25 5	10	1·4	9·5 , 10·1	Ao	
171	58·1292	53 28	59 2	125	2·9	8·5 , 11·5	G5	
172	24·3923	55 54	24 46	175	5·0	8·0 , 13·0	A2	
173	26·3755	58 0	27 0	282	7·4	9·4 , 10·2		
174	49·2118	58 53	50 5	300	0·5	10·0 , 10·4	Fo	
175	23·4279	59 18	23 7	83	4·8	9·2 , 11·7	Ao	AB
				264	12·1	9·2 , 11·2		AC
176	26·3799	9 1 32	26 56	64	2·9	8·0 , 10·9	G5	
177	27·3644	3 56	28 5	192	0·3	9·1 , 9·5	Ao	AB
				242	9·5	8·5 , 14·0		AB, C
178	27·3658	5 18	28 5	79	0·3	9·5 , 9·8	A2	
179	28·3635	5 39	28 21	160	0·4	9·2 , 9·4	G5	
180	28·3737	22 5	29 1	31	5·6	9·0 , 9·2	Fo	
181	23·4517	24 1	24 0	251	0·2	9·4 , 9·6	F5	
182	27·3783	25 46	27 14	206	1·1	9·0 , 9·0	B9	
183	23·4543	25 57	23 35	332	4·2	10·1 , 10·5		
184	24·4127	26 36	24 40	271	30·5	8·5 , 10·0	G5	AB
				149	4·8	10·0 , 13·8		BC
185	26·3995	31 37	27 4	204	3·8	7·6 , 10·6	Ao	
186	28·3783	31 55	28 35	78	3·0	9·1 , 11·1	F8	
187	26·4008	34 8	26 17	123	6·8	9·0 , 14·0		ACD = h 2501
188	27·3859	41 1	27 57	34	0·5	8·6 , 9·1	Fo	
189	26·4048	41 58	26 37	12	1·3	9·5 , 13·5		
190	25·4282	45 56	25 49	97	0·6	9·8 , 10·2	A2	AB
				194	6·0	9·4 , 14·0		AB, C
191	24·4235	51 35	24 8	46	2·6	10·0 , 12·5	F5	
192	23·4839	10 3 52	23 10	147	0·7	9·8 , 11·0		
193	25·4405	4 5	25 8	75	0·2	9·4 , 10·4		
194	27·4055	7 29	28 7	191	0·2	6·8 , 6·9	Ao	
195	26·4208	7 36	26 46	253	0·6	9·0 , 9·4	G5	
196	24·4496	17 15	25 5	278	0·6	10·7 , 11·0	G	
197	23·4911	17 59	23 20	174	0·3	9·2 , 10·2	G	
198	26·4336	21 3	26 29	132	0·3	10·7 , 10·9	F8	
199	25·4584	23 29	25 18	154	1·6	8·3 , 12·3	Go	
200	27·4193	24 28	27 58	196	3·4	7·8 , 12·3	K5	
201	23·4960	26 21	23 40	66	1·6	7·7 , 11·7	F5 + A3	

B.	C.P.D.	1900 α	1900 δ	θ	ρ	mag.	spec.	Remarks
	°	h m s	° ″	°	″			
202	26·4370	10 35 2	−26 56	315	2·5	10·0 , 11·5	F2	
203	26·4373	36 48	26 33	29	0·9	9·1 , 12·1	G5	
204	24·4553	38 50	24 34	293	3·1	8·4 , 13·4	G5	
205	23·5021	46 31	23 10	90	4·4	8·8 , 12·6	G5	
206	23·5025	48 56	23 48	264	1·6	7·8 , 11·3	F5	
207	25·4666	55 15	25 30	157	5·5	11·0 , 11·2	F8	
208	26·4429	57 34	26 17	317	0·1	6·7 , 7·1	Fo	
209	25·4689	11 2 29	25 22	304	0·9	10·8 , 12·3	A5	
210	23·5082	11 26	23 30	71	4·8	8·5 , 14·0	A2	
211	26·4494	13 16	26 10	42	1·1	10·4 , 11·6	G5	
212	24·4651	17 8	24 14	192	0·4	10·3 , 10·5	K2	
213	23·5125	19 44	23 56	274	2·1	8·8 , 11·4	Ko	AB
	(23·5126)			268	7·0	10·5 , 10·6		CD
214	27·4347	23 0	27 56	308	1·7	9·3 , 11·3	G5	
215	24·4676	24 0	24 13	189	0·4	9·0 , 9·1	Ao	
216	25·4792	31 17	25 12	125	1·1	9·2 , 14·2	F8	
217	26·4553	33 4	26 47	44	0·4	9·4 , 11·9	F2	
218	26·4632	55 3	26 33	335	0·6	9·5 , 10·5	Go	
219	26·4648	12 0 46	26 44	112	1·3	9·3 , 9·4	Go	
220	24·4783	2 38	24 47	303	6·2	9·5 , 11·1	Go	
221	26·4671	8 29	26 46	122	0·3	8·9 , 9·1	F5	
222	24·4809	9 34	24 13	94	4·3	7·5 , 14·0	Ko	
223	26·4681	10 17	27 5	3	1·4	9·0 , 14·0	Fo	
224	28·4434	11 33	28 25	152	0·8	9·4 , 12·4	A5	
225	24·4820	14 53	25 0	73	0·4	9·3 , 10·8	F8	
226	28·4451	15 57	28 43	222	6·0	10·1 , 12·3	Go	
227	26·4701	16 26	26 43	327	0·2	8·8 , 9·1	F5	
228	28·4470	22 11	28 10	134	0·3	8·3 , 8·7	Fo	
229	26·4720	23 31	26 33	276	1·4	8·5 , 10·7	F5	
230	26·4749	32 24	26 35	152	1·5	5·4 , 12·0	Fo	
231	27·4545	35 33	27 10	82	4·3	7·3 , 14·0	B9	
232	31·3489	40 42	31 13	28	0·6	8·2 , 12·0	Ko	
233	24·4928	44 20	24 42	284	2·2	9·0 , 14·2		
234	26·4811	46 34	26 15	306	0·6	10·2 , 10·4		
235	24·4942	46 38	24 10	62	2·8	8·3 , 14·0	K2	
236	30·3573	52 17	30 34	161	0·2	10·1 , 10·4	F2	
237	30·3582	55 32	30 51	297	7·3	8·6 , 13·8	Ao	
238	30·3583	56 21	30 18	291	5·9	7·5 , 12·5	Ko	
239	28·4608	56 59	28 44	255	3·8	6·9 , 13·2	Ao	
240	29·3707	58 14	30 3	354	5·8	9·2 , 10·7	A2	
241	29·3720	13 3 55	30 4	59	3·0	9·5 , 13·3	Ko	
242	25·5104	5 6	25 21	37	0·3	10·7 , 10·9	G5	
243	23·5705	6 33	24 4	168	1·9	10·2 , 10·7		
244	30·3617	6 55	30 32	215	1·2	8·2 , 13·2	Ko	
245	30·3621	7 24	31 1	272	6·3	9·0 , 14·7	K2	
246	26·4939	12 47	26 19	139	1·0	8·8 , 9.1	F8	NGC 5061 is 10^s f.
247	27·4685	14 23	27 17	328	1·8	9·9 , 12·7	F8	
248	27·4706	18 25	27 51	80	3·4	8·3 , 12·1	Ko	
249	31·3590	20 31	32 2	13	0·3	7·1 , 9·1	Fo	
250	25·5191	24 17	26 3	44	0·4	8·5 , 10·0	Ao	
251	24·5088	26 38	24 19	223	1·6	10·0 , 10·9		
252	28·4743	36 19	28 27	13	0·9	10·2 , 12·0	F5	
253	26·5066	39 36	26 47	54	0·4	11·7 , 11·7	Go	
254	27·4780	39 58	27 21	153	1·3	8·6 , 9·4	F5	
255	23·5798	42 55	23 21	186	4·6	8·1 , 12·3	Ko	

B.	C.P.D.	1900 α	1900 δ	θ	ρ	mag.	spec.	Remarks
	°	h m s	° ′	°	″			
256	26·5088	45 26	26 55	141	1·2	10·7 , 12·5	G5	
257	32·3514	46 12	32 38	3	6·5	9·0 , 11·5	F8	
258	23·5802	49 36	23 11	340	6·2	8·1 , 12·9	G5	
259	27·4827	50 8	27 52	188	5·2	10·6 , 13·6	F8	
260	28·4823	54 41	28 46	337	9·2	10·3 , 10·8	F5	
261	26·5139	54 56	26 25	345	6	10·7 , 12·2	F8	
262	30·3777	56 20	30 43	229	0·6	11·0 , 11·2	F8	
263	24·5211	56 50	24 11	276	0·6	8·4 , 10·4	G5	
264	27·4863	58 38	28 7	233	0·7	8·5 , 11·0	Fo	
265	29·3919	14 3 14	30 6	54	2·0	9·5 , 13·5	A2	
266	27·4891	3 22	27 26	173	4·5	11·8 , 12·2	F2	
267	28·4886	5 45	28 38	317	2·0	10·1 , 13·1	F8	
268	29·3933	6 3	29 26	88	2·0	9·6 , 13·1	Go	
269	32·3588	7 22	33 2	319	3·9	8·3 , 12·3	Ao	
270	29·3948	10 8	29 20	96	10·1	8·3 , 10·8	F2	AB
				104	1·9	10·8 , 13·3		BC
271	24·5288	15 27	24 24	119	0·6	11·2 , 11·2	F8	
272	25·5413	17 38	25 22	3	4·4	8·2 , 13·2	Fo	
273	25·5416	18 38	25 42	93	5·7	8·2 , 11·7	F5	
274	24·5346	30 20	24 9	337	0·7	8·4 , 12·4	Ko	
275	27·5023	34 14	27 34	310	2·1	10·6 , 12·9	G5	
276	26.5335	38 30	26 36	223	0·4	11·0 , 11·7	Fo	
277	28·5012	38 33	28 35	42	0·6	9·7 , 11·5	Fo	
278	26·5338	39 41	26 31	23	0·4	8·3 , 10·6	A3	
279	28·5020	41 8	28 21	38	4·9	9·5 , 10·8	Go	
280	26·5345	41 11	27 4	305	0·5	9·2 , 12·4	Ao	
281	26·5355	46 21	26 13	144	1·9	8·8 , 13·3	G5	
282	24·5395	48 16	24 48	266	5·8	9·2 , 15	Ko	
283	28·5050	51 56	28 10	251	0·5	9·6 , 9·9		
284	23·6042	54 48	23 38	242	0·2	10·8 , 11·3	Fo	
285	29·4072	55 10	29 14	28	3·6	8·8 , 12·8	Go	
286	25·5528	56 22	25 28	318	1·3	9·2 , 13·7	K5	

Observations of Eros, by *W. H. van den Bos.*

The following observations were made with the 26½-inch refractor of the Union Observatory. One revolution of the micrometer screw equals 9″·090. As the maximum distance which can be measured is only 3′, it is not always possible to measure angles and distances, even by means of a step star, but the accuracy of the chronograph transits and differences of declination will be sufficient as compared with the uncertainty in the coordinates of the comparison star. In using the latter method the observations were always made in the centre of the field of the eye piece by moving its slide. This cannot be done in the case of direct measures, as the star does not keep long enough on the wire.

Using the ephemeris in *Harv. Bull.* 834 the planet could not be located with the large telescope. Plates taken by Mr. WOOD with the Franklin Adams star camera on June 5 and 9 determined the correction to this ephemeris as + 38ˢ, + 5′20″, an unexpectedly large error for such a well known object as Eros, and which easily explains the failure to find it with the visual telescope. The ephemeris in "*Oppositions-Ephemeriden*", which starts at a later date, is nearly exact.

All observations except one have been made under good conditions, and Eros being between 11 and 12 magnitude is an easy object with this aperture. The observed differences, corrected for refraction, have been reduced to the beginning of the year as decided by the I. A. U.

Dr. SPENCER JONES kindly agreed to have the comparison stars observed with the Cape meridian circle; when the corrections to the adopted mean places become available the weight of the final results will be greatly improved.

I am indebted to Mr. W. M. WORSSELL for providing a chronograph.