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POSITIONS AND MAGNITUDES IN THE AREA OF THE OPEN CLUSTER NGC 752

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RESUMEN

Se derivan posiciones y magnitudes visuales aproximadas para 458 estrellas en el área del cúmulo abierto NGC 752.

ABSTRACT

Positions and approximate visual magnitudes are derived for 458 stars in the area of the open cluster NGC 752.

Key words: **STAR POSITIONS — OPEN CLUSTER**

I. GENERAL REMARKS

Since 1981 a program is under way at the CIDA observatory to determine positions and proper motions for open clusters for which no recent epochs are available. For clusters with small apparent diameter the 65-cm refractor with a focal length of 10.5-m is used, and the 100-cm Schmidt telescope with a focal length of 3-m for clusters of large apparent diameter. Observational material is already available for about fifteen objects of which so far four have been measured and analyzed (Tr 10, h Per, NGC 129, NGC 752). The results for the cluster Tr 10 have been published (Stock 1984).

The original idea was to use as first epoch the Carte du Ciel Astrographic Catalogue and whatever additional old positions might be found in the literature. This process requires the existence of a local system of reference positions and proper motions. For large fields the major star catalogues such as the AGK3 in the northern hemisphere or the Yale and Cape Zone catalogue in the southern hemisphere can be used, as well as the SAO catalogue for the entire sky. For small fields the same reference sources serve only if the star density happens to be large enough. These catalogues are not on a uniform system neither are they free of position- or magnitude dependent systematic errors. Such errors would be reproduced in the new positions or proper motions.

A typical case is that of the cluster Tr 10. Our positions (Stock 1984) are based on refractor plates using the SAO catalogue as reference system. Andersen and Reiz (1983) obtained recent positions for the same object using a transfer technique with the FK4 as the original reference source. The two sets of coordinates, both of high internal accuracy, show a large systematic difference which depends principally on the positions themselves, and to a smaller degree on the magnitudes. Neither of the two procedures can be claimed to be absolutely free of any possibility of systematic errors, even if the SAO catalogue may more readily be considered to be in doubt.

Problems of this type will find their definite solution once the HIPPARCOS observations become available. Since HIPPARCOS is only a few years away it seems appropriate to carry photographic positional work only to the level of final date in a provisional system. These may then later on be reduced to the HIPPARCOS system by simple transformations.

II. NGC 752

The photographic study of the open cluster NGC 752 by Eggen (1963) shows it to be an object of intermediate age. Eggen calls attention to a concentration of a certain type of background stars which can be confused with cluster members on the basis of their photometric data, but which may be separated by their distinct proper motions. The first proper motions for the cluster have been derived by Ebbighausen (1939) intercomparing plates taken with the Allegheny Refractor at two epochs differing by 20.9 years. However, no positions are given. More recent proper motions were derived by Lavdovskij (1961). The first position determination is due to Heinemann (1926).

NGC 752 appears to be a good candidate for an extensive and accurate proper motion study. Utilizing the position and proper motion data mentioned above and adding the Astrographic Catalogue plates as well as a new epoch almost a century would be covered by eight different epochs. For the brighter stars the AGK2 and AGK3 catalogues would add two more epochs. It is the purpose of this paper to contribute the most recent epoch.

III. OBSERVATION AND REDUCTION

The plates for NGC 752 were taken during 1981 and 1982, the mean epoch being 1981.87. The telescope used is the CIDA Refractor with an aperture of 65-cm and a focal length of 10.5-m. The plate material is Kodak 103aG, combined with a Schott OG 515 filter, thus minimizing the chromatic aberration of the visually corrected optical system. Exposure times were 15 minutes yielding a limiting visual magnitude of $13^{m}.7$. A fainter limiting magnitude would certainly be desirable. However, no first epoch positions would be available for the determination of proper motions. Several of the plates carry two exposures, with the plateholder inverted between exposures.

A total of sixteen exposures was measured on a Zeiss PSK2 stereo comparator. The stereo version of the measuring machine made it easy to distinguish between images belonging to different exposures.

The reduction of the measurements was carried out according to the method proposed by the author (Stock 1981), using the AKG3-catalogue as reference source. The average mean error (rms) of a position derived from a single image was found to be $0^{s}.011$ and $0''.13$ respectively.

Image diameters were estimated along with the coordinate measurements and calibrated for each exposure with the magnitudes given by Eggen (1963). The final visual magnitude is estimated to have a mean error of about $0^{m}.1$.

The final results are given in the catalogue in Table 1, which is mostly self-explanatory; N stands for the number of images measured.

TABLE 1

POSITIONS AND MAGNITUDES OF STARS

No	α (1950.0) δ						V	N
	h	m	s	°	′	″		
1	1	52	10.239	37	25	39.68	12.4	4
2	1	52	14.254	37	35	33.33	8.9	4
3	1	52	15.308	37	38	9.59	11.8	4
4	1	52	15.450	37	18	1.72	11.6	4
5	1	52	16.904	37	38	20.49	13.6	4
6	1	52	16.904	37	35	50.24	9.3	6
7	1	52	19.080	37	34	52.64	13.6	6
8	1	52	20.807	37	34	34.61	13.6	6
9	1	52	21.303	37	58	32.38	13.5	2
10	1	52	21.336	38	0	29.76	13.6	2

TABLE 1 (CONTINUED)

No	α (1950.0) δ						V	N
	h	m	s	°	′	″		
11	1	52	21.996	37	57	29.81	13.6	2
12	1	52	23.159	37	46	5.80	13.6	6
13	1	52	23.519	37	33	51.28	13.5	4
14	1	52	23.931	37	20	56.90	13.6	6
15	1	52	25.335	37	20	29.96	13.6	6
16	1	52	25.633	37	34	57.50	13.5	2
17	1	52	26.360	37	40	22.46	13.5	2
18	1	52	26.859	37	42	4.11	13.4	8
19	1	52	27.463	37	53	41.40	13.6	4
20	1	52	28.305	37	43	9.12	13.4	8
21	1	52	29.106	37	45	14.48	8.9	8
22	1	52	29.163	37	29	55.72	13.6	6
23	1	52	29.531	37	19	24.18	9.8	8
24	1	52	29.722	37	52	43.38	13.6	4
25	1	52	30.867	37	35	45.69	9.7	8
26	1	52	31.102	37	23	31.14	13.6	6
27	1	52	31.817	37	12	53.76	13.0	4
28	1	52	32.154	37	40	9.07	13.5	2
29	1	52	32.516	37	41	0.96	13.6	6
30	1	52	32.547	37	28	4.78	13.6	8
31	1	52	34.205	37	18	11.48	12.9	8
32	1	52	34.389	37	21	6.72	13.6	6
33	1	52	34.891	37	14	57.59	13.5	4
34	1	52	35.037	37	25	58.48	13.6	6
35	1	52	35.399	38	1	23.12	10.3	4
36	1	52	35.494	37	31	58.50	12.5	6
37	1	52	38.123	37	35	4.22	12.0	8
38	1	52	38.186	37	55	3.96	13.6	4
39	1	52	40.395	37	36	48.41	13.5	8
40	1	52	40.661	37	37	13.24	13.6	8
41	1	52	40.871	37	38	12.28	8.7	6
42	1	52	41.143	37	46	8.70	13.5	6
43	1	52	41.453	37	56	3.11	13.6	2
44	1	52	41.455	37	11	39.29	13.6	4
45	1	52	41.467	37	56	2.83	13.6	2
46	1	52	42.015	37	37	21.53	12.2	8
47	1	52	44.111	37	23	14.59	9.0	12
48	1	52	45.383	37	48	4.71	12.7	12
49	1	52	46.179	37	53	41.12	10.1	10
50	1	52	46.190	37	40	2.73	13.6	8
51	1	52	46.832	37	34	19.99	12.5	12
52	1	52	47.228	37	45	31.70	13.6	8
53	1	52	48.305	37	14	2.96	10.1	10
54	1	52	48.509	37	41	9.72	13.5	6
55	1	52	49.031	37	27	46.65	10.1	16
56	1	52	50.084	37	52	39.42	13.4	14
57	1	52	50.160	37	45	3.54	13.6	6
58	1	52	50.215	37	41	25.17	13.3	14
59	1	52	50.268	38	2	9.89	13.6	12
60	1	52	50.759	37	40	46.76	13.5	2
61	1	52	51.665	37	12	23.68	12.1	4
62	1	52	55.017	37	34	46.92	13.6	10
63	1	52	55.775	37	13	26.51	13.5	2
64	1	52	56.235	37	37	20.58	7.9	16
65	1	52	56.645	37	47	51.31	9.6	14
66	1	52	57.204	37	16	6.56	13.6	8
67	1	52	57.360	37	13	53.84	9.5	8
68	1	52	57.632	37	38	39.84	13.5	6
69	1	52	59.154	37	48	11.34	13.6	8
70	1	52	59.629	37	45	59.37	13.6	8

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TABLE 1 (CONTINUED)

No	α (1950.0) δ h	m	s	°	′	″	V	N
71	1	53	0.023	37	20	3.81	13.0	16
72	1	53	0.172	37	16	59.62	13.2	16
73	1	53	0.328	37	17	36.38	13.6	8
74	1	53	0.406	37	43	48.28	12.7	16
75	1	53	1.050	37	26	9.13	12.3	16
76	1	53	1.181	37	59	4.03	13.6	2
77	1	53	1.961	37	25	0.84	13.1	16
78	1	53	2.455	37	59	53.36	13.5	12
79	1	53	2.519	37	12	27.35	13.5	2
80	1	53	2.807	37	31	8.52	13.1	16
81	1	53	3.112	37	14	47.29	12.2	10
82	1	53	3.506	37	15	51.60	12.7	14
83	1	53	4.313	37	21	17.43	13.5	16
84	1	53	4.428	37	36	27.06	13.6	8
85	1	53	4.604	37	21	53.41	13.6	8
86	1	53	5.005	37	44	42.93	11.3	16
87	1	53	5.017	37	27	8.80	13.5	2
88	1	53	5.609	37	21	32.68	13.6	14
89	1	53	5.619	37	49	41.76	13.5	2
90	1	53	8.005	37	48	1.58	13.5	4
91	1	53	9.000	37	56	4.21	12.8	14
92	1	53	9.253	37	18	49.59	13.5	2
93	1	53	9.289	37	59	34.70	13.2	12
94	1	53	9.818	37	11	56.90	13.5	4
95	1	53	10.163	37	25	31.56	13.6	10
96	1	53	10.564	37	25	13.56	10.9	16
97	1	53	11.180	37	54	43.64	13.6	10
98	1	53	11.297	37	38	35.19	12.7	16
99	1	53	11.318	37	44	50.78	13.5	6
100	1	53	11.823	37	30	20.91	10.2	16
101	1	53	12.619	37	30	32.30	11.2	16
102	1	53	12.782	37	40	26.42	13.5	4
103	1	53	13.558	37	33	33.07	13.5	6
104	1	53	14.130	37	47	4.01	10.9	16
105	1	53	14.966	37	32	53.62	13.5	4
106	1	53	15.358	37	56	40.93	13.2	14
107	1	53	15.401	37	25	0.31	13.4	16
108	1	53	15.434	37	32	25.79	10.6	16
109	1	53	15.580	37	43	35.19	10.9	16
110	1	53	16.349	37	23	28.81	13.0	16
111	1	53	16.844	37	22	54.68	10.8	14
112	1	53	17.106	37	24	2.77	10.2	16
113	1	53	17.146	37	43	50.01	13.5	4
114	1	53	17.319	37	20	55.90	13.4	16
115	1	53	17.933	37	21	23.43	13.6	10
116	1	53	18.708	37	56	17.50	13.6	8
117	1	53	19.112	37	10	48.80	13.5	2
118	1	53	19.224	37	14	29.86	11.3	16
119	1	53	20.193	37	43	21.64	9.0	16
120	1	53	20.241	37	23	0.67	10.8	16
121	1	53	22.116	37	30	50.67	13.6	16
122	1	53	23.146	37	33	10.93	13.6	8
123	1	53	23.265	37	21	29.80	9.5	16
124	1	53	23.278	37	56	56.34	13.3	10
125	1	53	23.749	37	32	34.08	11.6	16
126	1	53	24.049	37	12	45.47	13.5	2
127	1	53	24.125	37	24	39.38	13.6	8
128	1	53	24.677	37	23	24.45	13.0	16
129	1	53	24.929	37	57	53.34	13.5	2
130	1	53	25.172	37	36	25.22	13.6	10
131	1	53	25.332	37	22	28.27	13.6	10
132	1	53	26.047	37	30	35.26	13.6	8
133	1	53	28.516	37	21	55.03	13.6	8
134	1	53	29.740	37	22	57.95	13.5	4
135	1	53	29.788	37	22	5.17	13.5	6
136	1	53	30.169	37	47	11.38	13.5	4
137	1	53	30.737	37	4	36.38	13.6	6
138	1	53	31.986	37	5[illegible]	24.63	13.6	2
139	1	53	32.926	37	58	2.89	13.6	12
140	1	53	33.294	37	28	51.08	12.7	16
141	1	53	33.661	37	19	44.00	13.1	16
142	1	53	34.223	37	42	8.13	11.7	16
143	1	53	34.363	37	35	48.03	13.5	8
144	1	53	34.586	37	19	41.20	13.6	8
145	1	53	35.530	37	54	11.06	13.6	14
146	1	53	35.614	37	38	29.60	13.5	2
147	1	53	36.376	37	29	38.47	11.8	16
148	1	53	36.995	37	29	19.90	13.2	16
149	1	53	37.447	37	56	46.90	13.6	4
150	1	53	37.655	37	32	49.83	13.6	10
151	1	53	38.305	37	30	34.61	13.6	10
152	1	53	38.487	37	40	2.13	13.9	16
153	1	53	40.545	37	37	3.06	10.4	16
154	1	53	40.722	37	51	25.72	13.6	10
155	1	53	41.563	37	1	11.48	10.7	12
156	1	53	41.836	37	21	24.09	13.2	16
157	1	53	41.926	37	45	19.74	11.9	16
158	1	53	41.999	37	45	11.34	13.3	16
159	1	53	42.012	37	42	22.58	13.5	6
160	1	53	42.509	37	20	3.77	11.3	16
161	1	53	42.735	37	19	14.78	13.5	4
162	1	53	43.237	37	34	25.29	11.6	16
163	1	53	43.541	37	34	26.95	10.5	16
164	1	53	45.008	37	46	37.83	10.9	16
165	1	53	46.436	37	33	7.93	13.5	8
166	1	53	46.620	37	51	21.40	13.2	14
167	1	53	50.242	37	14	33.66	10.5	16
168	1	53	50.345	37	11	54.42	13.4	4
169	1	53	50.904	37	46	43.91	9.2	16
170	1	53	50.925	37	33	27.18	13.5	6
171	1	53	50.948	37	13	54.54	13.5	6
172	1	53	51.457	37	40	27.80	13.5	2
173	1	53	51.557	37	43	36.39	13.5	4
174	1	53	51.565	37	47	20.33	9.0	16
175	1	53	52.192	37	42	15.11	13.6	16
176	1	53	53.064	37	12	59.23	10.8	4
177	1	53	53.835	38	1	26.06	13.6	2
178	1	53	53.985	37	34	13.36	13.6	6
179	1	53	54.066	37	18	57.64	13.6	10
180	1	53	54.322	37	37	31.80	10.4	16
181	1	53	54.687	37	25	55.26	12.7	16
182	1	53	55.485	37	48	2.09	13.5	2
183	1	53	56.449	37	50	7.94	12.4	16
184	1	53	57.093	37	33	21.95	11.2	16
185	1	53	57.128	37	53	38.23	13.1	14
186	1	53	57.247	37	44	32.64	11.9	16
187	1	53	57.305	37	44	36.03	11.8	16
188	1	53	57.312	37	49	26.45	13.5	10
189	1	53	57.789	37	25	14.06	10.1	16
190	1	53	58.011	37	19	4.73	13.5	8

TABLE 1 (CONTINUED)

No	h	m	s	°	′	″	V	N
	α (1950.0) δ							
191	1	53	58.239	37	50	52.51	13.5	4
192	1	53	58.345	37	42	8.76	13.1	16
193	1	53	59.773	37	19	28.66	13.0	14
194	1	54	0.510	37	55	42.48	12.6	14
195	1	54	0.993	37	19	51.75	12.7	16
196	1	54	3.082	37	19	31.25	11.9	16
197	1	54	3.124	37	44	31.36	13.6	5
198	1	54	3.692	37	54	26.11	12.6	12
199	1	54	3.709	37	38	30.35	11.2	16
200	1	54	3.771	37	38	32.61	13.6	8
201	1	54	3.787	37	45	47.41	13.6	6
202	1	54	4.103	37	53	25.22	8.9	14
203	1	54	4.240	37	47	25.07	13.6	8
204	1	54	4.361	37	41	7.32	11.7	16
205	1	54	4.408	37	59	54.74	13.6	6
206	1	54	4.664	37	50	34.50	11.7	12
207	1	54	4.804	37	20	1.11	13.5	16
208	1	54	5.340	37	53	10.23	13.3	14
209	1	54	5.631	37	22	33.43	13.5	4
210	1	54	5.873	37	52	55.92	13.1	14
211	1	54	6.317	37	45	43.71	12.8	16
212	1	54	6.723	37	36	5.70	13.1	16
213	1	54	9.081	38	2	13.72	13.6	2
214	1	54	9.211	37	18	58.99	13.5	2
215	1	54	9.393	37	34	19.28	13.6	16
216	1	54	9.516	37	33	29.97	13.6	14
217	1	54	10.808	37	36	38.81	13.5	8
218	1	54	11.542	37	47	29.45	12.4	16
219	1	54	11.580	37	38	39.45	13.6	8
220	1	54	11.679	37	11	38.23	13.6	4
221	1	54	11.835	37	21	44.61	13.5	16
222	1	54	11.967	37	11	18.25	13.6	4
223	1	54	12.115	37	12	49.82	13.6	4
224	1	54	12.621	37	25	49.04	12.7	16
225	1	54	13.214	37	44	47.87	9.6	16
226	1	54	13.234	37	52	51.76	13.6	10
227	1	54	13.247	37	43	28.85	12.8	16
228	1	54	13.292	37	39	37.02	13.1	16
229	1	54	13.308	37	41	27.79	11.9	16
230	1	54	13.333	37	27	20.58	12.4	16
231	1	54	14.052	37	24	44.08	12.0	16
232	1	54	14.979	37	59	0.54	13.5	2
233	1	54	15.404	37	52	32.90	11.0	14
234	1	54	15.540	37	32	14.27	10.0	16
235	1	54	15.844	37	39	34.02	13.4	16
236	1	54	16.193	37	18	40.66	13.1	16
237	1	54	16.657	37	39	35.39	13.6	14
238	1	54	16.920	37	14	21.76	13.6	16
239	1	54	18.588	37	26	14.89	13.1	16
240	1	54	18.699	37	11	32.53	10.4	4
241	1	54	18.833	37	38	43.30	13.6	8
242	1	54	18.929	37	35	29.16	13.6	8
243	1	54	19.555	37	37	57.38	13.6	10
244	1	54	20.295	37	24	34.00	13.0	16
245	1	54	20.491	37	44	46.71	12.1	16
246	1	54	21.913	37	37	6.56	10.2	16
247	1	54	22.023	37	19	3.45	13.6	12
248	1	54	22.070	37	27	59.87	13.6	10
249	1	54	22.594	37	55	26.81	13.5	4
250	1	54	23.278	37	22	12.65	13.5	6
251	1	54	23.698	37	21	46.69	12.2	16
252	1	54	24.363	37	23	45.15	13.2	6
253	1	54	24.952	37	51	33.93	12.8	16
254	1	54	24.965	37	37	35.42	12.2	16
255	1	54	27.083	37	37	6.24	10.2	16
256	1	54	27.301	37	28	43.22	10.6	16
257	1	54	27.528	37	24	43.89	11.2	16
258	1	54	27.530	37	26	19.11	13.6	16
259	1	54	27.840	38	0	42.61	13.6	12
260	1	54	28.887	37	53	36.29	13.6	8
261	1	54	28.893	37	20	34.16	10.3	16
262	1	54	30.680	37	58	24.50	10.2	12
263	1	54	31.753	37	50	20.25	13.6	6
264	1	54	32.028	37	40	21.66	10.1	16
265	1	54	32.968	37	39	4.43	11.6	16
266	1	54	32.996	37	26	26.45	13.6	8
267	1	54	33.166	37	43	3.99	13.5	4
268	1	54	33.869	37	27	29.53	13.6	12
269	1	54	34.691	37	35	26.00	13.6	16
270	1	54	35.335	37	31	53.35	13.5	6
271	1	54	35.812	37	54	42.08	11.7	14
272	1	54	36.192	37	23	3.88	13.6	12
273	1	54	36.933	37	43	46.95	13.6	8
274	1	54	37.454	37	30	34.11	9.9	16
275	1	54	37.688	37	53	27.59	13.5	14
276	1	54	38.833	37	14	51.75	9.7	14
277	1	54	38.854	37	34	24.76	10.1	16
278	1	54	38.918	37	25	2.10	9.0	16
279	1	54	38.948	37	35	14.48	13.2	16
280	1	54	39.210	37	32	53.14	13.6	8
281	1	54	39.634	37	53	54.32	13.1	14
282	1	54	40.116	37	31	7.15	13.6	4
283	1	54	40.171	37	31	36.56	9.6	16
284	1	54	40.568	37	37	49.96	10.4	16
285	1	54	44.027	37	25	36.07	7.6	16
286	1	54	44.380	37	42	5.98	13.5	2
287	1	54	45.079	37	37	6.37	10.5	16
288	1	54	45.253	37	56	31.02	12.9	14
289	1	54	45.723	37	44	42.67	10.0	16
290	1	54	46.786	37	24	49.47	9.7	16
291	1	54	46.966	37	49	52.63	10.5	16
292	1	54	47.458	38	0	38.33	8.8	12
293	1	54	47.824	37	44	25.11	13.6	16
294	1	54	48.355	37	32	54.82	11.0	16
295	1	54	48.811	37	14	22.85	13.6	6
296	1	54	50.707	37	51	12.48	13.6	10
297	1	54	50.709	37	34	38.02	10.2	16
298	1	54	52.252	37	59	34.51	13.6	6
299	1	54	52.475	37	38	30.06	11.6	16
300	1	54	52.692	37	25	17.12	13.6	10
301	1	54	53.396	37	48	34.66	12.5	16
302	1	54	53.455	37	13	10.69	12.3	4
303	1	54	55.568	37	58	52.02	13.0	12
304	1	54	55.615	37	28	25.51	13.2	16
305	1	54	56.033	37	33	17.87	13.3	16
306	1	54	56.244	37	38	10.69	11.6	16
307	1	54	57.532	37	35	25.81	10.7	16
308	1	54	58.149	37	59	47.71	13.5	4
309	1	54	58.225	37	59	39.29	13.5	2
310	1	54	58.902	37	33	47.16	11.4	16

TABLE 1 (CONTINUED)

No	α (1950.0) δ						V	N
	h	m	s	°	′	″		
311	1	54	59.672	37	11	31.57	12.5	4
312	1	55	0.068	37	26	51.73	12.3	16
313	1	55	0.360	37	40	18.68	9.9	16
314	1	55	1.065	37	26	3.64	9.8	16
315	1	55	1.266	37	42	36.18	13.6	6
316	1	55	2.500	37	31	2.29	13.6	6
317	1	55	2.904	37	30	24.31	13.6	16
318	1	55	3.654	37	47	5.53	12.9	16
319	1	55	3.889	37	15	3.03	13.0	16
320	1	55	4.647	37	44	12.48	13.6	12
321	1	55	4.851	37	32	36.67	12.6	14
322	1	55	5.322	37	35	35.64	13.0	16
323	1	55	5.535	37	36	5.64	11.9	16
324	1	55	5.371	37	11	36.28	13.6	4
325	1	55	7.543	37	23	31.82	13.2	16
326	1	55	8.150	37	57	45.91	13.6	12
327	1	55	8.608	37	45	57.80	11.9	16
328	1	55	8.918	37	25	22.21	10.8	16
329	1	55	9.205	37	35	8.05	12.7	16
330	1	55	10.641	37	14	0.62	13.6	5
331	1	55	11.586	37	20	47.44	13.5	6
332	1	55	11.701	37	44	22.72	13.5	2
333	1	55	12.029	37	28	3.42	12.2	16
334	1	55	12.631	37	24	58.77	11.3	16
335	1	55	13.434	37	49	24.47	11.2	16
336	1	55	13.578	37	18	3.64	11.1	14
337	1	55	13.985	37	20	5.87	10.8	16
338	1	55	14.093	37	57	6.69	13.2	12
339	1	55	14.416	37	13	50.72	13.6	4
340	1	55	14.486	37	52	9.85	12.8	14
341	1	55	14.554	37	29	49.93	12.0	16
342	1	55	16.613	38	3	27.77	11.7	4
343	1	55	16.618	37	18	45.04	13.3	16
344	1	55	18.085	37	23	41.48	11.2	16
345	1	55	18.172	37	24	20.10	13.3	16
346	1	55	19.079	37	19	18.72	13.6	16
347	1	55	19.098	37	42	24.28	13.5	16
348	1	55	19.185	37	52	19.49	12.8	14
349	1	55	19.863	37	33	36.73	9.2	16
350	1	55	20.302	37	38	45.67	11.2	16
351	1	55	20.956	37	38	31.32	11.3	16
352	1	55	21.066	37	22	8.59	12.2	16
353	1	55	21.384	37	49	38.88	10.3	16
354	1	55	22.031	37	26	34.58	13.2	16
355	1	55	22.032	37	46	1.29	13.6	8
356	1	55	22.465	37	57	22.27	13.1	12
357	1	55	22.518	38	0	36.44	13.5	6
358	1	55	23.316	37	18	50.47	13.6	10
359	1	55	23.464	37	28	47.35	13.6	10
360	1	55	24.609	37	47	1.64	13.6	16
361	1	55	25.378	37	37	27.25	13.4	16
362	1	55	25.452	37	43	15.84	12.7	16
363	1	55	25.554	37	32	1.89	13.6	16
364	1	55	26.027	37	54	16.94	13.3	14
365	1	55	26.145	37	20	55.79	13.6	6
366	1	55	26.245	37	37	52.44	13.3	16
367	1	55	26.337	37	58	17.79	11.8	12
368	1	55	26.042	37	30	20.47	12.1	16
369	1	55	26.445	37	50	58.59	12.3	16
370	1	55	26.735	37	42	12.13	13.0	16
371	1	55	27.999	37	38	1.43	13.2	16
372	1	55	28.293	37	49	53.54	12.0	16
373	1	55	28.649	37	37	28.23	12.1	16
374	1	55	28.824	37	20	48.13	11.8	16
375	1	55	29.194	37	42	0.56	12.2	16
376	1	55	30.744	37	35	40.24	13.6	6
377	1	55	30.785	37	37	3.46	9.3	16
378	1	55	33.460	37	20	35.41	13.6	2
379	1	55	34.443	37	45	54.81	13.6	16
380	1	55	35.542	37	25	41.33	13.6	16
381	1	55	36.340	37	48	7.45	12.2	16
382	1	55	37.935	37	30	36.90	9.5	16
383	1	55	38.347	37	40	21.71	13.6	16
384	1	55	39.348	37	17	41.92	11.4	16
385	1	55	41.203	37	23	31.52	11.8	16
386	1	55	41.781	37	40	14.99	13.6	14
387	1	55	41.952	38	2	9.45	13.6	6
388	1	55	43.196	37	25	30.62	13.5	2
389	1	55	44.367	37	39	41.20	10.5	16
390	1	55	45.493	37	24	5.81	13.6	10
391	1	55	45.936	37	42	10.35	13.6	10
392	1	55	47.970	37	54	37.14	10.8	14
393	1	55	52.179	37	14	58.19	10.5	14
394	1	55	52.698	37	26	34.19	8.0	14
395	1	55	53.253	37	19	18.96	13.6	4
396	1	55	53.422	37	50	47.20	13.6	14
397	1	55	53.844	37	34	24.03	9.1	16
398	1	55	54.226	37	58	59.89	13.6	12
399	1	55	54.271	37	44	38.82	13.1	16
400	1	55	55.097	37	20	9.38	13.6	12
401	1	55	56.222	37	19	26.02	10.9	12
402	1	55	57.673	37	35	25.23	12.0	12
403	1	55	58.358	37	29	22.61	12.0	12
404	1	55	58.392	37	25	7.74	13.6	8
405	1	55	58.679	37	23	54.02	13.2	12
406	1	55	58.855	37	16	52.03	13.6	6
407	1	55	59.134	37	23	54.12	13.5	4
408	1	56	0.581	37	46	45.80	11.6	12
409	1	56	2.875	37	21	0.15	11.2	12
410	1	56	6.498	37	45	29.38	13.5	2
411	1	56	7.780	37	43	27.80	13.5	2
412	1	56	7.931	38	0	9.99	13.5	10
413	1	56	9.801	37	39	5.58	13.5	2
414	1	56	9.989	37	47	31.95	13.6	10
415	1	56	10.001	37	18	46.14	11.1	12
416	1	56	10.081	38	0	47.29	12.4	12
417	1	56	11.449	37	14	58.97	13.1	12
418	1	56	12.739	38	2	56.29	8.8	10
419	1	56	14.758	37	56	34.42	13.6	6
420	1	56	14.781	37	55	4.58	12.2	12
421	1	56	15.143	37	25	11.41	11.5	6
422	1	56	15.478	37	46	22.73	8.5	12
423	1	56	16.868	37	56	12.26	13.5	2
424	1	56	18.897	37	35	17.31	13.6	4
425	1	56	20.139	37	36	13.71	11.5	12
426	1	56	20.243	37	50	59.43	13.6	10
427	1	56	20.534	37	31	29.85	13.6	8
428	1	56	20.637	37	29	41.66	13.1	12
429	1	56	21.631	37	30	15.92	12.1	12
430	1	56	24.474	37	47	5.57	13.6	8

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TABLE 1 (CONTINUED)

	α (1950.0) δ							
No	h	m	s	°	′	″	V	N
431	1	56	26.748	38	3	51.90	12.9	2
432	1	56	28.046	37	44	21.32	12.9	4
433	1	56	28.768	37	38	44.69	12.5	4
434	1	56	29.732	37	18	18.28	11.9	4
435	1	56	30.006	38	1	32.10	11.2	4
436	1	56	31.057	37	49	3.43		2
437	1	56	31.536	37	14	37.70	10.6	4
438	1	56	31.737	37	17	7.51	13.3	4
439	1	56	32.793	37	41	32.96	13.2	4
440	1	56	36.787	37	45	40.38	13.3	4
441	1	56	37.666	38	2	50.61	13.0	4
442	1	56	39.364	38	3	19.34		4
443	1	56	39.471	37	25	31.37	13.2	4
444	1	56	39.573	37	21	14.24		2
445	1	56	42.435	37	14	3.96	13.5	4
446	1	56	43.204	37	59	9.88	13.1	4
447	1	56	44.676	37	14	33.24	10.4	4
448	1	56	45.632	37	50	17.37		4
449	1	56	47.938	37	22	50.95		4
450	1	56	48.028	37	35	22.58	13.4	4
451	1	56	48.387	37	32	25.89		4
452	1	56	50.217	37	35	8.29	12.8	4
453	1	56	50.749	37	50	27.46	10.3	4
454	1	56	52.957	37	56	32.41		2
455	1	56	55.231	37	31	14.25	13.3	2
456	1	56	56.166	37	56	34.24	13.4	4
457	1	56	57.421	37	43	39.35	13.2	4
458	1	56	57.691	38	3	38.87	12.4	2

REFERENCES

Andersen, T.B. and Reiz, A. 1983, *Astr. and Ap.*, **53**, 181.
Ebbighausen, E.G. 1939, *Ap. J.*, **89**, 431.
Eggen, O. 1963, *Ap. J.*, **138**, 356.
Heinemann, K. 1926, *Astr. Nachr.*, **227**, 193.
Lavdovskij, B. 1961, *Len. Trudy*, 73, 7.
Stock, J. 1981, *Rev. Mexicana Astron. Astrof.*, **6**, 115.
Stock, J. 1984, *Rev. Mexicana Astron. Astrof.*, **9**, 127.

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