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## 1967 Güneş Leke Rasatları

### The Sunspot Observations Made in 1967

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**Özet:** İstanbul Üniversitesi Observatuarında yapılan fotosferik rasatlarda güneşin görüntüsü bir projeksiyon diski üzerine düşürülmekte ve yüzeyinde görülebilen lekeler ile meşalelerin resmi çizilmektedir. Bu resimlere dayanarak leke gruplarının helyografal koordinatları her gün için tayin edilir.

Makalede, 1967 yılında yapılan rasatlarda, rasat şemaları yardımı ile leke gruplarının koordinatları tayin edilmiş ve bunlara ait bazı istatistikel bilgi hazırlanıp sonuçlar cetvel halinde verilmiştir.

\* \* \*

**Summary:** In the photospheric observations made at the İstanbul University Observatory, observable sunspots and faculae are drawn on a projected disk of the sun and the heliographic coordinates of the sunspots are determined from this drawings.

This paper gives the heliographic coordinates for the sunspot groups observed in 1967 and some other statistical results.

\* \* \*

The photosphere of the sun is observed on every clear day at the İstanbul University Observatory. A refracting telescope is used for this purpose; the aperture of the objective and the focal length are 13 cm. and 200 cm. respectively. Sunspots and faculae are drawn on a projection disk of a diameter of 25 cm. The heliographic coordinates of the sunspot groups are determined from the American Ephemeris and Nautical Almanac. Each sunspot group is observed for a single rotation of the sun and the results obtained during this period are given in tables and in figures.

In this paper, columns in Table 1 give the following: (1) Current numbers of the groups; (2) and (3): The latitudes and longitudes of the groups respectively, which are the average of the latitudes and longitudes measured each day;

(4) and (5) : First and the last observations of the groups respectively ; (6) : Evolution of the groups which are classified according to the standard classification of Zurich. The letters characterize the types of the groups and the numbers after them give the number of umbrae in each group. The sign " ? " denotes a group which was observed at the edge of the disk and so could not be identified in the Zurich classification. The sign (\*) is used to express that the group probably could not be observed on that day, and (—) that no observation was made on that day because of weather conditions or other reasons.

In 1967, 625 groups were observed ; 393 of them in the North Hemisphere with an average latitude of  $+19^{\circ}.3$  and remained 232 groups in the South Hemisphere with an average latitude of  $-20^{\circ}.9$ . The distribution of the groups according to their latitudes is as follows (see Fig. 1) :

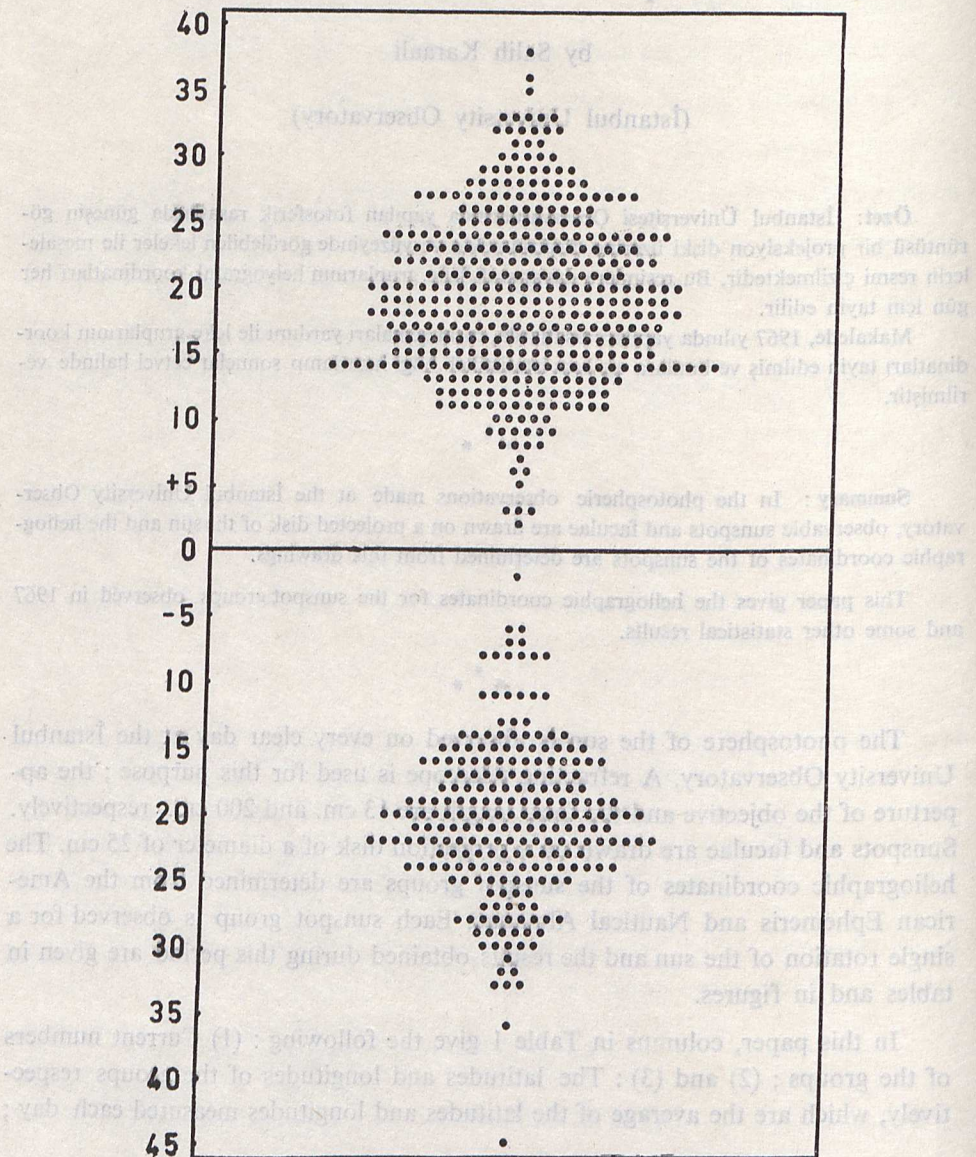


Fig. 1

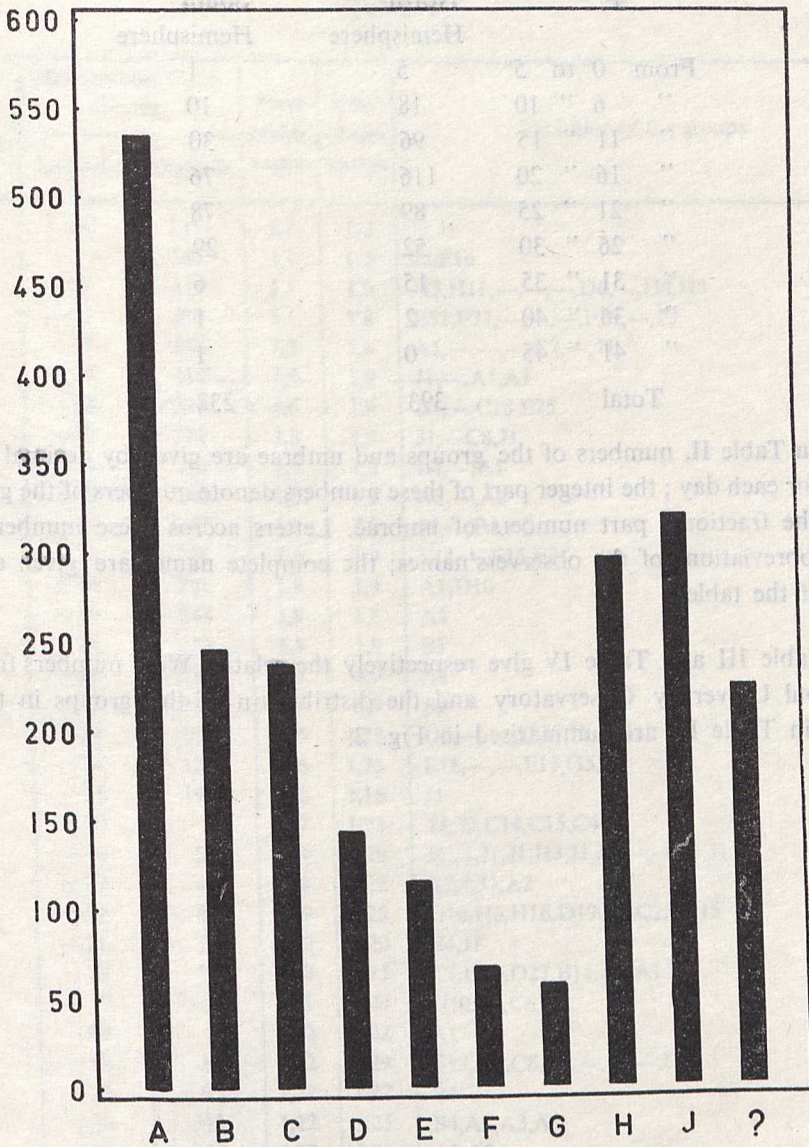


Fig. 2

$\pm$		North	South
		Hemisphere	Hemisphere
From	0° to 5°	5	1
"	6 " 10	18	10
"	11 " 15	96	30
"	16 " 20	116	76
"	21 " 25	89	78
"	26 " 30	52	29
"	31 " 35	15	6
"	36 " 40	2	1
"	41 " 45	0	1
Total		393	232

In Table II, numbers of the groups and umbrae are given by decimal numbers for each day; the integer part of these numbers denote numbers of the groups and the fractional part numbers of umbrae. Letters across these numbers are the abbreviations of the observers' names; the complete names are given at the end of the table.

Table III and Table IV give respectively the relative Wolf numbers for the Istanbul University Observatory and the distribution of the groups in types. Date in Table IV are summarised in Fig. 2.

Table 1

Current Numbers	Heliographic Coordinates		First observation	Last observation	Evolution of the groups
	Latitude	Longitude			
1	-24°	21°	I,1	I,2	J1,J1
2	+6	260	I,1	I,2	J2,E16
3	+17	274	I,1	I,9	H5,H11,—,—,—,D6,—,H4,H5
4	-23	319	I,1	I,8	E52,F77,—,—,—,F16,—,?3
5	+17	318	I,2	I,8	A1,—,—,—,C7,—,?1
6	+29	214	I,6	I,9	J1,—,A1,A1
7	+23	219	I,6	I,9	B7,—,C18,E25
8	+30	221	I,6	I,9	J1,—C8,J1
9	+13	233	I,6	I,8	B4,—,A1
10	+19	258	I,6	I,8	A2,—,A2
11	+17	265	I,6	I,9	J4,—,B4,A2
12	-18	266	I,6	I,9	E14,—,E15,E7
13	+14	241	I,8	I,9	A1,D10
14	-18	248	I,8	I,8	A1
15	+22	253	I,8	I,8	B3
16	-21	229	I,9	I,9	A1
17	+15	235	I,9	I,9	B3
18	+24	109	I,16	I,23	D6,—,—,J1,J1,J1,J1
19	-24	134	I,16	I,21	E16,—,—,E13,G5,?3
20	+16	199	I,16	I,16	J1
21	+20	8	I,19	I,23	?2,?2,C14,C15,C4
22	+16	23	I,19	I,29	J1,J1,J1,J1,H3,J1,J2,—,—,—,J1
23	+27	45	I,19	I,22	A2,—,*,J1,A2
24	+17	45	I,19	I,25	G16,H6,H16,D19,B6,C23,D15
25	+11	70	I,19	I,20	B4,J1
26	+13	72	I,20	I,25	C5,D20,D27,B14,A4,A1
27	-17	40	I,21	I,24	D10,B8,C6,B3
28	-19	4	I,22	I,22	A1
29	+18	13	I,22	I,29	C13,D9,C8,C8,—,—,—,E10
30	+24	95	I,22	I,22	B4
31	+20	342	I,22	I,25	B4,A3,A3,A2
32	+21	354	I,22	I,23	A2,A2
33	+21	9	I,23	I,24	C11,B16
34	+15	9	I,23	I,24	A3,A6
35	+17	31	I,23	I,25	B8,D9,C6
36	+18	43	I,23	I,23	B8
37	-22	317	I,23	II,2	?3,H5,H2,—,—,—,G24,—,—,H3,H2
38	+23	14	I,24	I,24	A1
39	+16	50	I,24	I,24	A1
40	+14	52	I,24	I,24	A1
41	+24	16	I,25	I,25	A1
42	+19	294	I,25	I,25	A1
43	+16	16	I,29	I,29	H6
44	+14	267	I,29	II,2	A4,—,—,C8,C3
45	+19	284	I,29	II,2	E26,—,—,C14C11
46	+16	301	I,29	I,29	A4
47	+21	359	I,29	I,29	B6
48	+14	195	II,1	II,13	?1,H2,—,—,—,—,—,E11,—,—,—,—,?1

Table I (cont.)

49	+27	216	II,1	II,8	?2,C3,—,—,—,—,J2
50	-16	215	II,1	II,8	J2,J2,—,—,—,—,G3
51	+15	237	II,1	II,1	A3
52	-22	249	II,1	II,2	A3,C5
53	-19	207	II,2	II,2	A1
54	-14	228	II,2	II,2	A1
55	+21	124	II,8	II,8	?7
56	-24	159	II,8	II,8	D8
57	+15	167	II,8	II,8	A1
58	+13	171	II,8	II,15	E18,—,—,—,—,D9,?3,?1
59	-24	39	II,13	II,23	?1,J2,J2,J2,J2,—J5,J5,—,A1,A1
60	+13	86	II,13	II,20	J1,J1,J3,J1,A1,—,A1,A1
61	+15	110	II,13	II,17	J3,C15,D22,D14,D9
62	+17	23	II,15	II,26	?2,J1,J1,—,H4,H3,—,H4,H4,D4,C6,?2
63	+18	82	II,15	II,15	?2
64	+18	126	II,15	II,15	A1
65	+23	6	II,16	II,26	?2,G2,—,J1,J10,—,B6,A1,B3*,A1
66	+24	13	II,19	II,19	A2
67	+20	12	II,19	II,27	J1,J1,—,J1,J1,J1,J1,J2,J1
68	+15	59	II,19	II,23	H3,H4,—,H3,H3
69	-22	311	II,20	II,28	?1,—,H3,H3,H3,H2,H2,H2,J2
70	+32	3	II,22	II,22	A1
71	+24	298	II,22	III,5	?8,F27,F32,F72,F73,F92,F52,—,—,—,?11,?5
72	-25	348	II,22	II,22	A1
73	-21	222	II,26	III,10	?1,?4,H7,—,—,—,F18,E37,—,—,E15,E14,G6
74	+17	264	II,26	III,8	A2,B7,D11,—,—,—,E9,E7,—,—,?1
75	-15	266	II,26	III,5	B5,B6,C7,—,—,—,A2,A2
76	-24	6	II,27	II,27	A1
77	-16	215	II,27	III,5	?1,J1,—,—,—,*,A1
78	-25	248	II,27	II,28	A1,A1
79	+19	270	II,27	II,27	A3
80	-20	275	II,27	II,28	B13,C9
81	+13	319	II,27	II,27	A2
82	+15	329	II,27	II,28	A1,A1
83	+13	207	II,28	III,5	?2,—,—,—,*,A2
84	-19	162	III,4	III,14	?9.F25,—,—,—,F25,F78,F33,E27,C45,D6,D8
85	+24	171	III,4	III,12	J3,C8,—,—,—,C8,D41,G7,G11,C9
86	+16	219	III,5	III,10	D13,D31,—,—,—,H6,D7,J1
87	+16	279	III,5	III,5	A2
88	-8	293	III,5	III,5	A2
89	+18	185	III,8	III,11	A1,A3,A2,A1
90	+18	214	III,8	III,8	A2
91	+18	242	III,8	III,8	A1
92	+20	83	III,11	III,14	A2,C5,D11,J2
93	-15	144	III,11	III,11	A2
94	-15	40	III,12	III,23	?1,?2,?7,—,—,—,D11,D15,D8,—,—,J4
95	+28	87	III,12	III,12	B2
96	-25	105	III,12	III,12	B2
97	-20	144	III,12	III,12	A1
98	+24	6	III,18	III,26	C10,C7,H2,—,—,—,C5,J1,—,J1
99	+16	28	III,18	III,18	A1
100	+29	84	III,18	III,20	J1,J1,A1
101	+18	344	III,18	III,26	?1,J2,C11,—,—,—,C10,J2,—,B2
102	+18	355	III,18	III,28	J1,H2,H2,—,—,—,G9,H5,—,J1,J2,?1
103	-18	34	III,19	III,20	B4,J1
104	+27	78	III,19	III,19	A1

Table I (cont.)

105	+7	27	III,20	III,20	A1
106	+19	45	III,20	III,23	A1,—,—,A1
107	+24	294	III,20	III,20	?1
108	+15	265	III,23	III,30	?4,D10,—,C8,H5,A10,B4,A1
109	+24	274	III,23	III,27	?4,J1,—,A1,J1
110	+21	288	III,23	IV,2	?14,E25,—,E38,E15,E16,E39,E36,E29, ?11, ?4
111	+27	287	III,23	III,26	?5,C3,—,A1
112	+23	301	III,23	III,30	H4,H2,—,H2,H3,H10,H14,H5
113	+14	336	III,23	III,28	C5,J2,—,A1,J1,A1
114	+22	340	III,23	III,23	A4
115	+16	332	III,24	III,24	A1
116	+26	339	III,24	III,29	C3,—,B5,D5, ?8,J1
117	—20	346	III,24	III,24	A1
118	—19	232	III,26	IV,3	?1,H2,H14,H21,H26,D13,D14,C8,C6
119	—23	312	III,26	III,26	A1
120	+22	282	III,28	III,28	C11
121	—22	295	III,28	IV,2	D14,E27,E19,E11, ?7, ?4
122	+17	185	III,29	IV,5	?1, ?3, *,A2,A1, *,B9,J3
123	+27	192	III,29	IV,2	?3,B3,C2,A1,A1
124	+18	275	III,29	III,31	C8,B6,B3
125	+23	172	III,30	IV,5	?1,J2,J2,B2,A1,A1,B3
126	+30	277	III,31	IV,1	A1,J2
127	+27	164	IV,1	IV,2	A1,A1
128	+19	173	IV,2	IV,2	A1
129	+14	192	IV,2	IV,2	A2
130	+33	205	IV,3	IV,6	B2,A2,B4,A3
131	+11	110	IV,4	IV,8	?1,J2,J2,J4
132	—25	129	IV,4	IV,12	A2,C8,C17,C5,C16,C11,H4,H3,G3
133	—19	207	IV,4	IV,5	A1,B3
134	—27	127	IV,5	IV,5	B6
135	—23	113	IV,6	IV,6	A2
136	—20	155	IV,6	IV,12	B5,D24,D40,E54,F29,E12, ?3
137	—35	200	IV,6	IV,6	A1
138	+19	89	IV,7	IV,9	A1,A4,A6
139	+23	111	IV,7	IV,15	B4,D10,D14,C18,C16,D7,H4,H2, ?4
140	+21	124	IV,7	IV,8	B2,A3
141	+15	54	IV,8	IV,15	?1,J1,J1,J1,J1,J1,J2
142	+21	136	IV,8	IV,8	A1
143	—20	171	IV,8	IV,9	A10,A4
144	+31	138	IV,9	IV,9	B4
145	—24	149	IV,9	IV,9	A1
146	+14	83	IV,13	IV,13	B2.
147	+14	110	IV,13	IV,15	B3, *, ?4
148	+26	342	IV,13	IV,25	?1,H1,H1,—,H5,H3,H3,H2,H4,H3,H5,J7, ?1
149	+18	60	IV,15	IV,19	A2,— B2,B4, ?1
150	+24	292	IV,17	IV,28	?1,H2,H1,H2,H2,J1,J1,H2,H2,H1,H1,J1
151	—22	292	IV,17	IV,28	?2, ?3,H2,H3,H5,J2,H11,J7,J4,J5,J3,A1
152	—21	3	IV,18	IV,23	B10, *,B4,C12,C6, ?6
153	—14	275	IV,18	IV,27	?1, ?2,A2,B8, *,B19,B4,B5,A2,A1
154	+32	352	IV,18	IV,18	A1
155	—11	4	IV,19	IV,19	A1
156	+20	315	IV,19	IV,19	A2
157	+27	231	IV,23	IV,30	?8,C6,D10,D13,C25,C34,—,B11.
158	—20	264	IV,23	IV,23	B4.
159	+14	283	IV,23	IV,26	B3, *,A2,A1.

Table I (cont.)

160	+17	282	IV,23	IV,23	A2
161	-25	282	IV,23	IV,25	A4,*,J1.
162	+22	296	IV,23	IV,23	A1
163	-45	297	IV,23	IV,23	B3.
164	+24	302	IV,23	IV,23	A1
165	+28	290	IV,24	IV,24	A2
166	-27	341	IV,24	IV,25	B4, ?2
167	-18	210	IV,25	V,4	A2,B6,B6,C12,—,H3,H3,H3,H2,H1
168	-20	155	IV,27	V,9	?1, ?6,—,D18,C14,C26,C30,C17,—,C15,C6,J1, ?1
169	+14	183	IV,27	V,7	A1,A1,—,C13,C9,D18,D12,D11,—,H2, ?1
170	+26	236	IV,27	IV,30	B5,*,—,A1
171	+33	247	IV,28	IV,30	B4,—,A2
172	-18	204	IV,30	IV,30	B9
173	+22	107	V,1	V,13	?1,H1,H2,H3,—H5,H3,H2,H1,H1,—,—, ?1
174	-21	224	V,1	V,4	B4,B7,B3, ?1
175	-22	204	V,3	V,3	A1.
176	+11	195	V,4	V,6	A1,—, ?3
177	+22	127	V,4	V,4	A4
178	-14	128	V,6	V,6	A2
179	+13	189	V,6	V,6	A2
180	+16	109	V,7	V,7	A1
181	-17	180	V,7	V,7	?1
182	+19	183	V,7	V,7	?1
183	-24	4	V,9	V,13	?1,A1,—,—,C11
184	-14	308	V,13	V,18	?1, ?1,J1,J1,*,A3
185	+26	328	V,13	V,24	H1,H1,H1,H1,H1,H2,H2,—,—,J1,J1, ?1
186	+21	15	V,14	V,14	A3
187	+28	308	V,14	V,14	A1
188	-15	336	V,14	V,19	B7,B10,C9,C12,C19,C11
189	-24	363	V,14	V,14	B4
190	-13	286	V,15	V,24	?3,H4,J3,C12,J6,—,—,J1,J1,A1
191	+15	326	V,16	V,18	B3,*,A1
192	+24	1	V,17	V,17	A2
193	+26	228	V,18	VI,1	?1, ?4,—,—,F68,F76,F93,F76,F51,—,F120,F38 F32, ?11, ?3
194	-18	277	V,18	V,22	C12,D15,—,—,C5
195	+22	269	V,19	V,19	A3
196	+10	199	V,22	VI,2	?2,H3,H3,H2,H4,—,H3,H2,E8,E7,E11, ?3
197	-17	219	V,22	VI,1	H3,H1,H4,H5,H3,—,H1,H1,H1,H1, ?1
198	-16	282	V,22	V,25	J1,C4,B7,A3
199	-28	324	V,22	V,23	B5,C6
200	+23	167	V,23	V,4	?1, ?5, ?3,D6,—D7,D6,B3,A2,B12,B4,A1,A1
201	-25	226	V,23	V,24	A2,A2
202	+21	239	V,23	V,30	H1,H2,H2,F24,—,H2,J1,J1
203	+25	242	V,23	V,29	G10,G18,H5,E10,—,H5,J1
204	+27	160	V,24	V,28	?4, ?5,C5,—B4
205	+13	196	V,24	VI,1	B7,D4,C8,—,E31,E16,J2,B7,A2
206	-21	209	V,24	VI,1	C4,C17,E18,—,E24,E12,H4,H3, ?4
207	+19	170	V,25	VI,4	?3,D8,—,D16,D6,D7,E11,D18,J1,J1, ?1
208	-22	168	V,25	V,28	C3,B5—,B5
209	+ 3	252	V,25	V,26	B2,A2
210	-19	138	V,26	VI,6	?2,—,H4,H8,H9,H9,H9,H9,H9,H7,J4,J2
211	+23	111	V,28	VI,9	?2,J3,J1,D16,E33,E38,E41,F49,E32,E20,E15, ?7, ?1
212	+22	120	V,28	V,28	?2
213	+20	124	V,28	V,28	A2



Table I (cont.)

214	+22	191	V,28	V,28	A2
215	+28	209	V,28	V,28	A2
216	-27	226	V,28	V,28	A1
217	+30	237	V,28	V,28	A2
218	+28	240	V,28	V,28	B11
219	+23	98	V,29	VI,8	?1,H5,H9,H17,H18,H26,E41,F31,H11,C12,B11
220	+20	129	V,29	VI,1	A1,A2,J1,J2
221	+27	103	V,30	VI,5	C5,C17,E35,C11,C5,C10,C6
222	-20	214	V,30	V,30	A3
223	+14	127	V,31	VI,1	A2,A1
224	+27	157	V,31	V,31	A4
225	+17	184	V,31	V,31	A1
226	-20	134	VI,1	VI,1	A3
227	+31	101	VI,2	VI,4	A3,B6,A2
228	+23	172	VI,2	VI,4	J1,J1, ?1
229	+22	123	VI,3	VI,3	A4
230	-13	45	VI,4	VI,7	B3,B5,B3,A2
231	+15	47	VI,4	VI,13	C3,D10,C13,A7,B6,B7,J5,A2,*,A1
232	-20	68	VI,4	VI,4	B2
233	+28	99	VI,8	VI,8	A1
234	+27	31	VI,9	VI,9	A1
235	-8	341	VI,9	VI,9	A1
236	-17	31	VI,10	VI,15	A7,C9,C12,C9,C8, ?4
237	+11	29	VI,10	VI,10	A5
238	+3	46	VI,10	VI,10	A1
239	+32	75	VI,10	VI,10	A1
240	-20	252	VI,14	VI,18	?2,D5,J1,J2,B7
241	+25	230	VI,15	VI,27	?1,J1,J4,H5,J1,J1,J2,J1,J1,J1,J1,A1
242	+19	237	VI,15	VI,22	?1,J1,J3,J2,J1,J2,J1,J1
243	+24	302	VI,15	VI,15	A1
244	+22	310	VI,15	VI,15	A3
245	-20	216	VI,16	VI,20	?1,J1,J2,J1,A2
246	-6	323	VI,16	VI,16	A1
247	+25	212	VI,17	VI,22	?2,C11,C12,B10,B7,A10
248	+11	199	VI,18	VI,25	J1,J1,J1,J2,J2,J2,A1
249	+16	252	18	VI,25	A1,B2,C9,C6,B5,A1,*, ?2
250	+17	174	20	VII,1	?6,G8,G20,E34,E24,E25,E14,H7,H11,H11,H3, ?5
251	+26	207	20	VI,20	A1
252	-23	217	20	VI,20	A1
253	-24	157	22	VII,2	?8,C13,D17,E30,E28,E12,H8,C16,C11,C9, ?4
254	+33	203	22	VI,25	B5,*,*,A1
255	+23	211	22	VI,22	A1
256	+29	255	23	VI,23	A1
257	+24	109	24	VII,7	?2, ?3,H6,H3,H7,H7,H2,H3,H3,H3,H3,H2, ?3, ?1
258	+24	167	24	VI,24	A1
259	-30	190	24	VI,25	B2,B6
260	-18	174	25	VI,25	A2
261	+36	195	25	VI,25	A1
262	-22	209	25	VI,25	A2
263	+29	224	25	VI,25	A1
264	-16	146	28	VI,30	A5,*,B3
265	-23	152	28	VI,28	B11
266	+19	168	28	VI,29	A5,A2
267	+19	53	29	VII,10	?5,H2,H1,H1,H2,H4,H2,H3,H4,H4,H3,J1
268	-20	131	29	VI,29	A3

Table I (cont.)

269	-16	36	30	VII, 8	?1,J2,J2,J2,J3,J3,J2,J3,J2
270	+17	43	30	VI, 30	A1
271	+12	85	30	VI, 30	B5
272	+32	158	30	VII, 2	B5,A2,A1
273	-22	17	VII,2	VII, 2	?2,B2,J2,A1,A1,B6,A2
274	+12	45	2	VII, 8	A3,A2,*,B3,B2
275	-22	64	2	VII, 6	C11,D11,D13,E10,E22,C21,C9 ?2, ?1
276	+15	135	2	VII,10	B6,C7,J2
277	+14	58	3	VII, 4	A1,*,A3,A4
278	+18	349	3	VII, 6	?1, ?1.J2.J3.J2.J2.C13,A5,A3,A1,A1
279	-23	21	4	VII,13	A1
280	+20	49	5	VII, 4	A2,A1
281	+24	349	5	VII, 6	A1,B13,B7,C11,C19,C12,C16,C10,A5,D17, ?3
282	+15	57	6	VII,15	B7
283	+26	94	6	VII, 6	A2
284	+28	112	6	VII, 6	?1
285	-20	23	7	VII, 6	B6
286	+24	317	8	VII, 7	B2,C5,C11,C5,B2
287	+ 5	29	9	VII,12	B4
288	+14	43	9	VII, 9	B4
289	- 7	6	10	VII, 9	A1
290	-23	251	10	VII,10	?1
291	+16	272	10	VII,10	A1
292	-14	278	11	VII,10	A1,A1,A2,J4,J3,A1
293	-22	265	12	VII,16	B2,A1,A1
294	+25	298	12	VII,14	C3,C9,B13,B10,B6,*,J3
295	-18	249	13	VII,18	C4,D13,D30,E58,E30,E29,B11,*,D9, ?2
296	-20	208	14	VII,22	?1,H2,G5,H6,B2,B10
297	+ 9	199	15	VII,19	?2,C6,B6,A3
298	+19	194	16	VII,18	A1
299	-19	265	16	VII,16	C8,C7,B4
300	-15	272	16	VII,18	A1,A1
301	+29	233	17	VII,17	A2
302	-23	162	18	VII,17	?3,G4,C11,C12
303	-30	180	19	VII,21	A1,C5,C19,C8,C3,J1,J2,J1,J1
304	-28	181	19	VII,27	B2
305	+27	99	21	VII,19	?1, ?6,F25,F28,F43,F65,F63,F96,F80,F130,F42,F56 F48, ?15, ?6
306	- 8	154	21	VIII,4	C6,C6,C18,A11,B12,B6,*,A1
307	-21	159	21	VII,28	B6,B5,B2,*,J2
308	+20	180	21	VII,25	A3
309	+16	185	21	VII,21	A1
310	+14	85	23	VIII,4	?3, ?4,G9,G22,G10,G23,G23,F34,F22,F32,E19,E9, ?3
311	-22	167	23	VII,23	A1
312	-24	177	23	VII,24	A1,C4
313	+29	185	23	VII,23	A1
314	+17	216	23	VII,24	A3,A1
315	-17	147	24	VII,25	A1,A6
316	- 8	159	24	VII,24	A2
317	+14	180	24	VII,24	A3
318	+29	192	25	VII,26	B8,A4
319	+12	54	26	VIII,6	J4,H11,D21,C16,C17,C7,H6,H9,H7,H4,H2,J4
320	+20	41	27	VIII,8	H2,C16,D15,C15,C14,C13,C12,C15,H4,H3,J1 J1,J1
321	+18	70	27	VIII,5	B7,D11,G29,E27,C15,C14,C19,H2,H1,H1

Table I (cont.)

322	-22	27	28	VIII, 2	?1,J1,J4,J1,B2,A1
323	-29	27	VIII,1	VIII, 9	B5,D8,C14,C12,D28,E23,H6, ?3, ?1
324	-17	25	3	VIII, 3	A2
325	+20	297	VIII,4	VIII,15	?5,D18,F55,F46,F30,F33,E24,E44,E43,D12 D7, ?6
326	+18	347	5	VIII,10	A7,B4*,B7,B7,B5
327	-22	268	6	VIII,18	?2,H7,H7,H20,H12,H10,H12,E9.E8,H4 H2,H1, ?1
328	+28	270	6	VIII, 9	C3,C3,C7,A8
329	+17	7	7	VIII, 7	A1
330	+19	316	7	VIII, 8	A5,A3
331	- 6	341	7	VIII, 7	A1
332	-17	250	8	VIII,19	?1,H1,H2,H4,H1,H4,H1,H8,H2,,H1,J1,J1
333	+11	269	8	VIII, 9	B4,A1
334	-19	327	8	VIII,12	A2,A4,B6,B5,B7
335	+25	274	9	VIII,11	A2*,A2
336	+29	266	11	VIII,11	A2
337	+25	329	11	VIII,13	E18,E14,E8
338	-24	262	12	VIII,14	B11*,A6
339	-31	166	13	VIII,25	?1, ?1,H1,H4,H2,H2,H5,H15,H7,H13,H6,H4,J2
340	+25	247	13	VIII,18	A2,J2,B7,B15,B14,C13
341	-19	263	13	VIII,13	B5
342	+ 2	275	13	VIII,13	A1
343	- 7	275	13	VIII,13	A1
344	+20	291	13	VIII,14	A2,A2
345	- 8	210	14	VIII,14	A1
346	-16	241	14	VIII,14	A3
347	+27	244	14	VIII,14	J1
348	+18	221	15	VIII,21	A7,D24,E12,D10,G3,G3,J1
349	+ 9	204	16	VIII,23	A5,E28,E60,E26,E30,E23, ?17, ?1
350	+19	186	18	VIII,18	A2
351	-30	199	18	VIII,18	A1
352	+33	351	18	VIII,19	C3, ?1
353	+23	87	19	XI, 1	?2, ?18,E20,E45,F43,F77,F88,F60 F65,F41,* F26, ?10, ?3
354	+13	95	19	VIII,23	?2,J4,A1,J1,B2
355	+25	98	19	VIII,26	?2,J2,A1,C16,B21,B10,B14,B9
356	+13	231	19	VIII,20	A1, ?3
357	+17	71	20	VIII,25	?1,A2,C4,J1,A1,A2
358	+13	72	20	VIII,31	?2,D7,H2,H7,C6,J1,C7,J2,J1*,A1,A1
359	+30	84	20	VIII,24	A2*,A6,C8,A5
360	+27	92	20	VIII,24	C5,A2,A2*,B14
361	-32	110	20	VIII,20	A2
362	+13	81	22	VIII,30	D20,D20,D25,D23,C32,B12,B22*,B7
363	+18	82	22	VIII,22	A1
364	+18	76	23	VIII,24	A3,A6
365	-21	82	24	VIII,31	C16,D13,C27,D26,C37*,D4,C3
366	+31	83	24	VII,24	A4
367	-36	94	24	VIII,24	A3
368	+24	95	24	VIII,28	B26,B7,B16,B8,A1
369	+30	94	24	VIII,26	A6*,A5
370	+20	98	24	VIII,24	A2
371	+23	103	24	VIII,25	A4,A1
372	+11	157	24	VIII,25	A2,A1
373	+10	18	25	VIII,25	A1

374	+17	43	VIII,26	VIII,26	A1.
375	+32	94	VIII,26	VIII,26	A4.
376	+14	100	VIII,26	VIII,26	A6.
377	-33	17	VIII,27	VIII,27	A1.
378	+22	95	VIII,27	VIII,27	B6.
379	-23	16	VIII,28	IX, 1	B4,* ,A2,A2.
380	+26	324	VIII,28	IX,10	?1,* ,E10,E23,E34,E19,E53,C34,H5,H4,H2,J1,J2, ?1.
381	-29	337	VIII,28	IX, 7	?1,* ,H2,J1,J3,J1,J2,J2,J1,J1,J1,
382	-22	36	VIII,30	IX, 4	B13,B11,B6,B4,C3, ?1.
383	+14	296	VIII,30	IX, 7	?3, ?5,E18,E14,E33D23,D15,C4,B5.
384	+22	332	VIII,30	VIII,30	A4.
385	+20	333	VIII,30	VIII,30	A1.
386	-29	352	VIII,30	VIII,31	C2,B3.
387	+27	35	VIII,31	IX, 1	A3,B3.
388	-19	39	VIII,31	IX, 4	A3,A2,B3,C2, ?1.
389	+14	87	VIII,31	IX, 1	A1,A1.
390	-20	331	VIII,31	IX, 8	B7,D13,G6,D17,D12,J1,J1,J1,J1
391	-32	14	IX, 1	IX, 1	A2.
392	+16	55	IX, 1	IX, 1	A1.
393	-22	288	IX, 1	IX,10	A1,C3,C23,D19,D9,A2,B2,* ,A4,A3.
394	+22	301	IX, 1	IX, 6	A3,A1,A3,C14,J1,A2.
395	+ 8	31	IX, 3	IX, 3	A3.
396	-23	263	IX, 3	IX,14	?1,J2,J1,J1,J2,J2,J3,J3,J1,J1,J1,A1.
397	-30	11	IX, 4	IX, 5	A2, ?1.
398	+24	273	IX, 4	IX,14	B2,J3,B3,* ,A4,* ,D17,E21,E21, ?13, ?2.
399	+32	316	IX, 4	IX, 4	A2,
400	+20	304	IX, 5	IX, 7	A9,* ,A1.
401	-20	325	IX, 5	IX, 8	J4,J2,J2,J1.
402	+ 6	224	IX, 6	IX, 7	A1,J1.
403	-21	229	IX, 6	IX,16	?2,C6,C11,C10,C11,C12,C6,J2,B4,A2,A2.
404	+13	303	IX, 6	IX, 9	B5,A1,* ,A2.
405	-15	355	IX, 6	IX, 6	A1.
406	-24	219	IX, 7	IX,10	A2,J2,C7,C7.
407	-21	292	IX, 7	IX, 7	A2.
408	+21	312	IX, 7	IX, 8	A3,A2.
409	+12	189	IX, 8	IX,20	?1,H3,H6,H10,H7,G25, G21,G14,G12,H6,—,H2, ?1.
410	-22	253	IX, 8	IX, 8*	A2.
411	+22	270	IX, 8	IX, 8	A1.
412	+19	310	IX, 8	IX, 8	A2.
413	+27	269	IX, 9	IX,14	A5,* ,J1,D8,J3, ?1.
414	+14	260	IX,11	IX,13	B2,* ,A1.
415	-30	147	IX,12	IX,23	?1,J1,J2,J1,J1,J1,—,J1,J1,J1,J1, ?1.
416	+13	184	IX,12	IX,12	A4.
417	+11	158	IX,13	IX,13	A5.
418	+ 8	206	IX,13	IX,13	B9.
419	-21	224	IX,13	IX,13	A2.
420	+ 8	226	IX,13	IX,13	A1,
421	+17	174	IX,14	IX,14	B2
422	-24	120	IX,16	IX,25	A4,C12,—,E33,E33,F22,E21,E17,—, ?5.
423	+16	126	IX,17	IX,17	B3.
424	-14	159	IX,17	IX,17	A2.
425	+12	135	IX,19	IX,19	A1.
426	+20	204	IX,19	IX,19	?3.
427	+24	83	IX,20	IX,22	A3,B5,A4.

428	+16	92	IX,20	IX,28	C7,A7,B8,A3,—,C9,C15,?24,?3.
429	+24	93	IX,20	IX,21	A1,A2.
430	+10	146	IX,20	IX,22	B5,C10,C6
431	-22	93	IX,21	IX,21	B2.
432	+27	99	IX,21	IX,21	A5.
433	-11	69	IX,22	IX,22	A1.
434	+28	82	IX,22	IX,22	A4.
435	+25	86	IX,22	IX,22	A3.
436	+15	79	IX,23	IX,23	A4.
437	+18	155	IX,23	IX,23	?3.
438	+15	341	IX,25	IX,25	A1.
439	+12	326	IX,25	X, 7	?1,H4,E11,H16,H3,H1,H5,H5,H1,H1,H1,H1,?1.
440	+23	317	IX,26	X, 3	?1,A1,A1,B5,A4,*,*B12.
441	+11	25	IX,27	X, 2	A3,B7,B7.A2,A1,A1.
442	+21	314	IX,27	X, 7	C6,C7,B6,A2,A6,A3,*D15,C8,J2,A1.
443	+14	46	IX,28	IX,28	A1.
444	-16	293	IX,28	X, 9	?3,H5,H10,H10,H4,H6,C13,D21,E37,E15,E17,?2.
445	+14	345	IX,28	X, 5	A3,*B14,D19,E12,D12,D8,?5.
446	+23	257	IX,30	IX,30	?1
447	-20	13	X, 1	X, 3	A1,B2,?2.
448	-19	259	X, 1	X,10	?8,C10,C15,H7,H5,J1,J1,J2,A2,A2.
449	+12	342	X, 1	X, 1	A2.
450	-26	223	X, 3	X,14	?1,J1,J1,J3,H8,H9,J1,J2,J2,J2,A2.
451	-19	315	X, 3	X, 7	A1,C5,D14,D5,?2.
452	+25	335	X, 3	X, 3	A1.
453	+12	231	X, 4	X,11	A2,A1,B9,C9,C14,J1,A1,A1.
454	-22	254	X, 4	X, 6	B10,*B8.
455	+15	275	X, 4	X, 4	A3.
456	-15	288	X, 4	X, 4	A2.
457	-28	286	X, 5	X, 8	A2,*B3,A1.
458	-15	299	X, 5	X, 5	A2.
459	+18	217	X, 6	X,15	A2,**,C4,B7,B7,C8,D10,D8,?2.
460	+28	254	X, 6	X, 6	A2.
461	+23	261	X, 6	X, 6	A6.
462	-19	289	X, 6	X, 6	A1.
463	-33	212	X, 8	X, 8	A3.
464	+14	264	X, 8	X,11	B7,D14,E12,E11.
465	+16	195	X, 9	X,17	B7,C10,C19,C17,C36,C21,G21,H10,?3.
466	+20	203	X, 9	X, 9	A2.
467	+24	261	X,10	X,10	A1.
468	-25	121	X,11	X,19	?1,J2,J2,J2,J2,C17,H11,J4,J1.
469	+22	209	X,13	X,14	A1,A2.
470	+19	135	X,14	X,14	A2.
471	-24	100	X,15	X,15	A3.
472	+14	101	X,15	X,18	A2,**,A7.
473	-17	105	X,15	X,18	B5,B9,B6,B5.
474	-22	123	X,15	X,15	B5.
475	+22	104	X,17	X,17	A1.
476	+10	29	X,18	X,29	J1,J2,—,D20,E45,D58,D38,D26,D77,F79,F47,F13.
477	+17	53	X,18	X,27	A5,D6,—,E16,E25,G19,G8,H2,H9,J1.
478	+15	79	X,18	X,18	A2.
479	+24	158	X,18	X,18	A1.
480	+ 3	177	X,18	X,18	A2.
481	+11	9	X,21	X,28	J1,J2,J1,A1,J3,A1,A7,A3.
482	+21	342	X,21	X,31	?1,J1,J1,J1,H6,J3,J4,J4,A2,*A3.

483	+19	354	X, 21	X, 30	B2,A1,C8,D16,C27,C7,D21,C22,C14,B3.
484	+12	18	X, 22	X, 24	A2,A5,B3.
485	+11	330	X, 22	XI, 2	?2,J1,J1,J1,J1,J1,J1,H6,J1,J1,A1,A1
486	+38	8	X, 23	X, 23	A2.
487	+14	345	X, 23	X, 23	A1.
488	+33	14	X, 24	X, 24	A2,
489	+15	64	X, 25	X, 25	A4.
490	+20	303	X, 25	X, 30	A4,A11,D16,D11,B10,B6.
491	+14	270	X, 26	XI, 7	?1,H1,H1,H1,H2,H1,H1,H1,H1,H1,H1.
492	+21	349	X, 26	X, 26	B8.
493	-19	262	X, 27	XI, 7	?2,?4,H5,D16,D15,G6,G10,C17,C35,C24,C10,A9.
494	-28	277	X, 27	XI, 2	A1,D6,D14,D18,D15,J4,A3.
495	+22	320	X, 27	X, 27	A3.
496	+19	322	X, 27	XI, 4	D8,D12,C21,C16,C13,H12,H12,?7,?8.
497	+18	250	X, 28	XI, 7	?2,H2,H2,H4,H7,C9,C16,C9,B13,A1,A1.
498	+17	332	X, 28	X, 28	A8.
499	-22	235	X, 29	XI,10	?6,G5,G6,H5,H3,H13,H30,H24,H4,H7,H6,H2,?2.
500	-15	302	X, 29	X, 29	A4.
501	-16	323	X, 29	X, 29	A2.
502	+21	313	X, 30	X, 30	B4.
503	+13	262	X, 31	XI, 2	A4,*,A3.
504	-21	248	XI, 1	XI, 5	C13,C8,C8,*,B19.
505	-27	283	XI, 1	XI, 5	J3,J1,J1,A1,A1.
506	-18	327	XI, 2	XI, 2	A2
507	-11	190	XI, 3	XI, 3	A1.
508	-24	240	XI, 3	XI, 4	A1,B4.
509	-21	256	XI, 3	XI, 4	A6,A4.
510	-28	266	XI, 3	XI, 5	C10,A5,A2.
511	-13	306	XI, 3	XI, 4	A4,A4.
512	-22	247	XI, 4	XI, 4	C15.
513	+16	282	XI, 5	XI, 5	A1.
514	+15	206	XI, 6	XI, 6	A1.
515	-16	250	XI, 7	XI, 7	B2.
516	+15	91	XI, 9	XI,21	?1,H6,—,H11,—,H6,H2,H1,G7,H8,J1,—,?1.
517	+12	144	XI,10	XI,17	A1,—,C19,—,D14,D14,D7,?2.
518	+16	184	XI,10	XI,10	A1.
519	-26	232	XI,10	XI,10	?5.
520	+17	51	XI,12	XI,14	?1,—,A2.
521	+11	75	XI,12	XI,22	J6,—,J1,J7,C16,D23,C11,D10,—,C5,?3.
522	+ 8	124	XI,12	XI,12	A1.
523	- 8	133	XI,12	XI,12	A4.
524	+10	40	XI,14	XI,24	G12,G12,F22,F32,F32,F35,—,G10,G6,G5,G7.
525	-21	104	XI,14	XI,15	B3,B2.
526	+19	45	XI,15	XI,19	A1,A5,B10,B8,B7.
527	+17	102	XI,15	XI,19	A3,*,B6,B2,B3
528	-14	122	XI,15	XI,17	A10,B12,A4.
529	+18	29	XI,16	XI,19	A4,*,*,A2.
530	+12	89	XI,16	XI,16	A5.
531	-14	129	XI,16	XI,16	A1.
532	-18	21	XI,17	XI,17	A1.
533	+19	24	XI,17	XI,21	C13,B14,B7,—,C3.
534	+ 9	27	XI,17	XI,18	A1,A1.
535	+22	67	XI,17	XI,17	A1.
536	+17	96	XI,17	XI,17	A1.
537	+22	102	XI,17	XI,17	A2.

538	+19	7	XI, 18	XI, 24	B6,B11,—,B5*,B5,B3.
539	-24	98	XI, 18	XI, 19	C6,D6.
540	+20	321	XI, 18	XII, 1	?1,?3,—,G5,G4,G12,F28,—,—,G8,G12,—,E12,?7.
541	-11	343	XI, 19	XI, 19	A1.
542	+20	3	XI, 21	XI, 21	A1.
543	-16	39	XI, 21	XI, 21	B4.
544	-20	282	XI, 22	XI, 24	A1*,C8.
545	+12	272	XI, 23	XII, 3	?1,J1,—,—,C5,C6,—,J2,J1,—,A1.
546	-21	277	XI, 23	XI, 23	A2.
547	-25	269	XI, 24	XI, 24	J2.
548	-29	314	XI, 24	XII, 1	H5,—,—,D12,E34,—,E27,E12.
549	-27	233	XI, 27	XII, 1	J1,J1,—,J4,J3.
550	-19	283	XI, 27	XII, 3	G4,H24,—,H18,C17,—,H3.
551	-28	328	XI, 27	XI, 27	J2.
552	+26	334	XI, 27	XI, 30	E19,E26,—,H2.
553	+13	209	XI, 30	XI, 30	A1.
554	-20	251	XI, 30	XII, 4	B9,D17,—,C11,J1.
555	+21	270	XI, 30	XII, 4	A1*,—,D7,A3.
556	+21	153	XII, 1	XII, 1	?2.
557	+27	213	XII, 1	XII, 1	A1.
558	-26	268	XII, 1	XII, 1	A1.
559	+12	142	XII, 3	XII, 9	J1,J1,—,J1,J3,J1,A2.
560	+11	157	XII, 3	XII, 9	J2,C3,—,H1,H4,H2,H8.
561	+14	156	XII, 3	XII, 3	D7.
562	+26	195	XII, 3	XII, 4	C5,B4.
563	-17	203	XII, 3	XII, 3	A1.
564	-26	232	XII, 3	XII, 3	A1.
565	+22	241	XII, 3	XII, 3	A1.
566	-15	248	XII, 3	XII, 4	B3,A3.
567	-16	120	XII, 4	XII, 13	?1,—*,E25,E10,G44,—,—,—,J1.
568	+14	164	XII, 4	XII, 9	A4,—,A1,A1,A1,A2.
569	+16	236	XII, 4	XII, 4	A1,
570	-18	94	XII, 6	XII,17	D19*,J2,C10,—,—,—,H7,—,—,—,J3.
571	+25	132	XII, 6	XII,13	B18,D23,D9,D26,—,—,—,J2.
572	+9	85	XII, 7	XII,17	?1,J1,J1,—,—,—,H3,—,—,—,A2.
573	+15	92	XII, 7	XII, 9	A1,A1,A2.
574	+18	97	XII, 7	XII, 9	A1,A1,B2.
575	-24	99	XII, 7	XII,13	J1,J1,J2,—,—,—,A1.
576	+20	118	XII, 7	XII, 9	A1,C5,B2.
577	+12	176	XII, 7	XII, 8	A2,A1
578	-28	214	XII, 7	XII, 7	A2.
579	+14	85	XII, 9	XII, 9	A1.
580	+19	106	XII, 9	XII, 9	A2.
581	+18	141	XII, 9	XII, 9	A1.
582	+18	151	XII, 9	XII, 9	A2.
583	+20	24	XII,13	XII,13	A1.
584	+20	37	XII,13	XII,18	B2,—,—,—,D22,D16.
585	+9	39	XII,13	XII,18	J2,—,—,—,J2,A1.
586	-15	100	XII,13	XII,13	J1.
587	-25	112	XII,13	XII,13	G14.
588	+14	149	XII,13	XII,13	J4.
589	+9	163	XII,13	XII,13	?1.
590	+18	29	XII,17	XII,22	F78,F79,—,F24,—,F34.
591	-22	41	XII,17	XII,17	A1.

592	-21	59	XII,17	XII,17	B5.
593	+26	72	XII,17	XII,18	D14,D13.
594	+20	73	XII,17	XII,17	B4.
595	-33	94	XII,17	XII,18	H7, ?3.
596	-28	104	XII,17	XII,17	?1.
597	-25	312	XII,17	XII,28	?2,H1,—,H2,—,H8,—,H3,H3,G2,G3,J5.
598	+23	335	XII,17	XII,27	H9,E11,—,G3,—,H13,—,H2,H3,H2, ?1.
599	+14	10	XII,18	XII,18	A1.
600	+16	45	XII,18	XII,18	B4.
601	+11	355	XII,18	XII,18	A1.
602	+21	45	XII,20	XII,20	A2.
603	+23	340	XII,20	XII,20	A2.
604	-23	249	XII,22	XII,31	?4,—,E24,E11,E11,G8,H5,H3,H3,H2.
605	+14	265	XII,22	XII,26	A1,—,A3,J1,J1.
606	-29	312	XII,22	XII,24	B3,—,B2.
607	-17	326	XII,22	XII,26	G7,—,G12,D7,B4.
608	-20	285	XII,24	XII,25	J2,J2.
609	-16	257	XII,25	XII,31	D16,F33,E34,F51,F46,F29,F27.
610	-11	342	XII,25	XII,26	H2,H5.
611	-14	197	XII,26	XII,31	?5,D10,D9,D10,D14,D10.
612	-28	194	XII,26	XII,31	A2,A4,C16,D14,C22,D25.
613	-17	332	XI,27	X,I,27	A1.
614	-18	201	XII,28	XII,31	A5,A3,A4,A6,
615	-16	205	XII,28	XII,31	C7,B6,B5,C10.
616	-19	294	XII,28	XII,30	J1,G4, ?2.
617	-29	153	XII,29	XII,31	?1,J1,J1.
618	-11	192	XII,29	XII,31	A1,*A1.
619	-16	192	XII,29	XII,29	A2.
620	-23	241	XII,29	XII,29	A2.
621	-15	246	XII,29	XII,31	B3,D8,C6.
622	+13	266	XII,29	XII,29	A1.
623	-19	283	XII,29	XII,29	A5.
624	-16	135	XII,31	XII,31	J1.
625	- 2	210	XII,31	XII,31	A2.



	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
1	4.60	LT	—	8.40	SB	14.151	LT	7.128	AE	14.92	LT	9.61	LT
2	5.106	DK	—	9.24	DK	9.88	DK	7.116	AE	7.37	SM	11.53	SB
3	—	—	—	3.9	DK	9.94	SB	7.64	SK	9.51	SB	12.43	LT
4	—	—	7.65	6.16	SK	11.120	LT	7.35	SK	11.67	DK	9.21	DK
5	—	—	11.123	7.29	SK	6.88	DK	6.59	SB	10.60	SB	8.85	LT
6	10.62	DK	—	6.40	LT	5.49	SM	7.92	DK	12.77	LT	5.17	DK
7	—	—	—	6.40	DK	4.36	AE	8.70	DK	8.40	LT	5.20	SM
8	13.59	LT	8.59	10.89	SB	4.25	LT	10.64	AE	7.53	LT	1.6	SB
9	9.55	DK	5.143	8.95	LT	4.10	DK	9.77	SM	8.33	DK	2.3	SB
10	—	—	5.49	4.52	DK	5.19	SB	5.49	SM	7.35	DK	5.15	LT
11	—	—	5.43	4.32	SK	2.11	LT	7.85	SK	6.41	SB	—	—
12	—	—	7.65	4.14	SK	1.12	DK	6.88	SB	4.29	SB	6.42	LT
13	—	—	3.19	5.11	LT	2.10	SM	10.45	DK	5.51	LT	—	—
14	—	5.15	DK	3.4	DK	6.15	AE	10.31	DK	6.37	LT	6.38	SM
15	—	4.21	SK	4.15	DK	6.15	LT	6.33	AE	7.40	LT	8.51	SB
16	—	7.32	SK	5.12	SB	5.5	DK	6.52	AE	3.36	SM	9.73	SB
17	4.23	DK	—	4.10	SK	5.12	SB	6.58	SM	4.21	SM	13.103	LT
18	—	—	—	7.24	SK	7.29	LT	9.93	LT	8.27	SB	10.130	DK
19	7.39	LT	6.25	7.12	SK	7.18	DK	9.43	AE	3.9	SB	5.33	SB
20	8.21	DK	7.32	5.13	SK	9.33	SM	12.87	LT	5.40	LT	8.34	SM
21	8.66	SB	9.28	5.31	DK	6.26	AE	9.64	DK	7.49	LT	—	—
22	12.97	LT	—	4.12	SB	9.53	AE	11.107	SM	8.54	SM	4.14	SB
23	14.81	DK	12.69	13.68	LT	6.52	SM	10.112	SM	8.48	LT	5.25	SB
24	13.81	SK	12.56	7.27	DK	7.49	SB	17.211	AE	5.28	SB	7.54	LT
25	9.53	SK	—	9.29	SK	12.75	LT	11.153	DK	—	—	—	—
26	—	—	12.62	6.28	SK	4.49	DK	10.167	LT	4.16	SM	8.73	SB
27	—	13.134	DK	8.43	LT	4.23	SM	7.120	DK	3.20	SB	9.118	SB
28	—	10.93	SK	7.59	DK	6.47	AE	8.108	AE	5.45	LT	7.61	SM
29	8.81	LT	9.118	—	—	6.44	LT	—	—	8.41	SM	6.103	SM
30	—	—	9.101	7.57	LT	9.33	LT	11.73	AE	5.26	DK	14.101	LT
31	—	—	8.61	—	—	15.101	SK	13.73	AE	7.34	SB	9.88	LT
										10.73	DK	11.91	LT
										9.62	SM		

Observers : SK = S. Karaali  
SB = S. Bengi  
LT = L. Topaktaş  
DK = D. Koçer  
AE = A. Ertuğrul  
SM = S. Marşoğlu

TABLE III

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
1	100	116	—	120	80	291	82	198	232	132	142	151	1
2	156	120	—	114	105	178	123	186	131	107	163	—	2
3	—	—	—	39	110	184	121	134	240	141	205	163	3
4	—	—	135	76	108	230	109	105	234	177	226	111	4
5	—	—	233	99	—	148	129	119	160	160	165	—	5
6	162	—	—	100	89	99	194	162	159	197	67	90	6
7	—	—	—	100	73	76	130	150	173	120	70	185	7
8	189	120	139	189	23	65	102	154	150	123	16	155	8
9	145	—	193	175	33	40	120	167	116	113	23	258	9
10	—	—	99	92	22	69	113	99	118	105	—	—	10
11	—	—	93	72	—	31	65	155	107	101	65	—	11
12	—	—	135	54	—	22	79	148	118	69	—	—	12
13	—	65	49	61	54	30	82	145	173	101	102	159	13
14	—	61	66	34	77	30	109	131	103	97	98	—	14
15	—	102	—	62	55	75	120	93	47	110	131	—	15
16	63	70	—	—	68	55	166	112	59	66	163	—	16
17	—	65	—	50	58	62	112	118	75	61	233	280	17
18	—	—	85	94	120	99	104	183	—	107	189	230	18
19	109	86	102	82	101	88	88	133	90	39	196	—	19
20	101	95	118	63	—	123	36	207	119	—	—	83	20
21	146	—	—	81	—	86	137	154	134	90	114	—	21
22	217	118	—	52	166	143	77	217	128	148	54	140	22
23	221	110	189	198	216	112	147	212	78	186	75	—	23
24	211	93	176	97	280	119	145	381	—	150	—	118	24
25	143	121	—	119	260	195	152	263	56	153	—	125	25
26	—	168	182	88	276	89	162	267	50	208	124	155	26
27	—	264	114	123	—	63	154	190	95	264	121	131	27
28	—	193	175	129	446	107	229	188	121	241	—	179	28
29	161	—	208	—	226	104	224	—	76	230	163	241	29
30	—	—	191	127	223	123	287	183	104	173	166	178	30
31	—	—	141	—	251	—	161	203	—	152	—	201	31

TABLE IV

Evolution Type	A	B	C	D	E	F	G	H	J	?	Total
Number of groups	535	247	239	145	117	68	58	297	321	225	2252
Percentage of numbers	24	11	11	6	5	3	3	13	14	10	100