

## The Sunspot Observations Made in 1999

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We present, photospheric sunspot observations of the year 1999 made at the Istanbul University Observatory

This paper gives the heliographic coordinates for the sunspot groups observed in 1999 and some other results.

The photosphere of the Sun is observed on every clear day at the Istanbul University Observatory. A refracting telescope is used for this purpose; the aperture of the objective and 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 by using the Astronomical Almanac for which the Position Angle of the Sun's axis  $P_0$ , Heliographic Latitude  $B_0$ , Longitude  $L_0$  are calculated for the time that observation was made. 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 I give the following (1): Current numbers of the groups; (2) and (3): The mean latitude and longitude of each group respectively; (4) and (5): First and last observations of the groups respectively; (6): Evolution of the groups which are classified according to McIntosh Sunspot Group Classification (Solar-Geophysical Data, 1984). The first upper case letter in column gives "Modified Zurich Class". The second upper case letter gives the penumbra of the largest spot. The third upper case letter in the column gives the sunspot distribution. The Figures after these letters give the number of umbrae in each group. The sign "?" denotes a group which was observed at the edge of the disk and could not be identified in the McIntosh Classification. The sign "X" is used to express that the group probably could not be observed on that day, and "-" that no observation was done on that day because of weather conditions or other reasons.

In 1999, 445 groups were observed; 261 of them have an average latitude of  $+19^\circ$  in the North Hemisphere and remaining 184 groups have an average latitude  $-20^\circ$  in the South Hemisphere. The distribution of the groups according to their latitudes is as follows (see Fig.1).

In Table II, number of groups and umbrae are given by decimal numbers for each day; the integer part of these numbers denote the 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 II.

Latitude Intervals	North Hemisphere	South Hemisphere
From $0^\circ$ to $05^\circ$	7	2
From $5^\circ$ to $10^\circ$	18	7
From $10^\circ$ to $15^\circ$	57	40
From $15^\circ$ to $20^\circ$	83	49
From $20^\circ$ to $25^\circ$	53	41
From $25^\circ$ to $30^\circ$	25	27
From $30^\circ$ to $35^\circ$	8	16
From $35^\circ$ to $40^\circ$	6	2
From $40^\circ$ to $45^\circ$	4	0
<b>TOTAL</b>	<b>261</b>	<b>184</b>

Table III and Table IV give the relative Wolf Numbers for the Istanbul University Observatory and the distribution of the groups in types, respectively. Data in Table IV are summarized in Figure 2.

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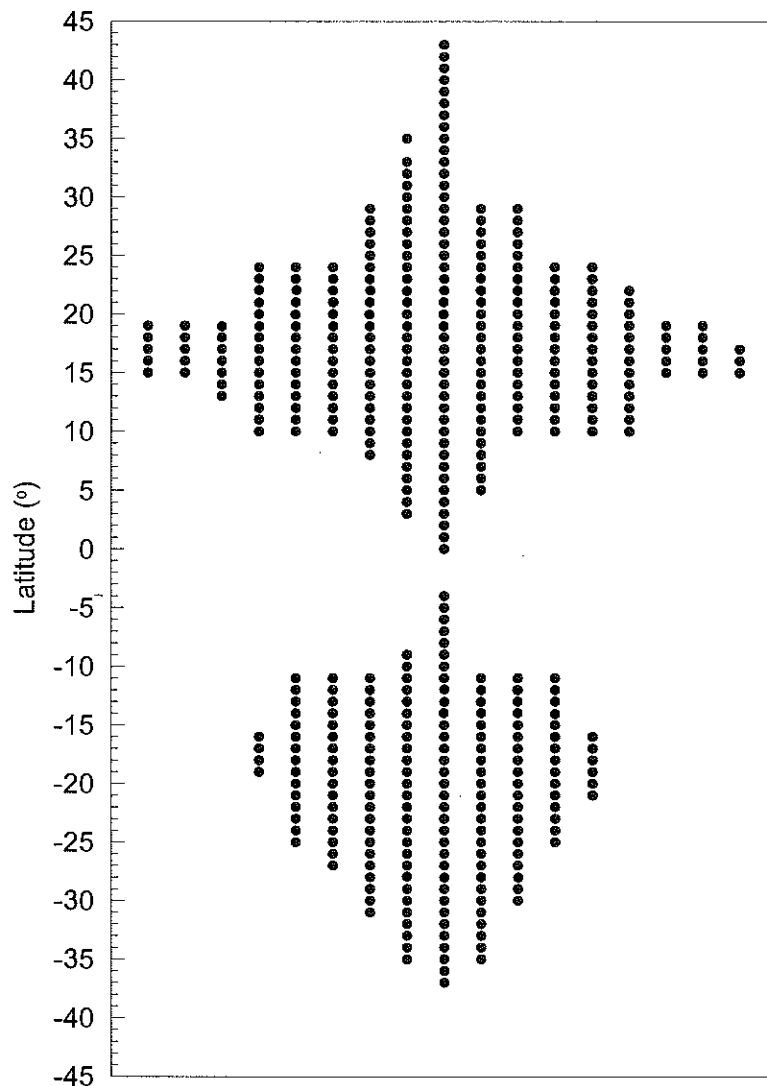


Fig. 1 - Distribution of the groups according to their latitudes.

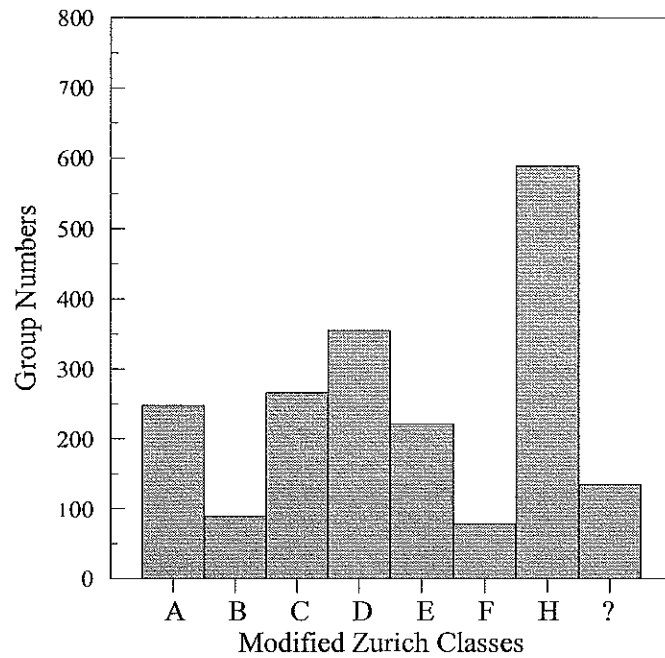


Fig. 2 - Distribution of types of groups

TABLE t

Current Number	Heliographic Coordinates		First Observation	Last Observation	Evolution of the groups						
	Latitude	Longitude									
1	28	223	27.12.98	1.1.99	Dki-23	Eke-15					
2	15	209	1.1.99	1.1.99	Bxo-2		Ekc-16	-	-	-	?-1
3	26	172	27.12.98	2.1.99	Dkc-29	Eke-46					
4	22	135	1.1.99	7.1.99	Ax-1	Bxo-2	Ekc-28	Ehc-18			
					?-1						
5	14	90	1.1.99	1.1.99	Hr-1						
6	-23	160	27.12.98	2.1.99	Dsi-13	Dsc-12					
					Ha-2		Csi-11	Cso-4			
7	26	116	7.1.99	7.1.99	Bxo-4						
8	14	93	7.1.99	10.1.99	Eao-8	Eao-4					
9	12	34	7.1.99	7.1.99	Ax-2		Cao-4	Cro-3			
10	-22	115	7.1.99	7.1.99	Ax-1						
11	-29	46	7.1.99	10.1.99	Cro-6	Cso-9					
12	-29	21	7.1.99	10.1.99	Hr-2	Cao-5	Cro-4	Ax-6			
13	-27	6	7.1.99	9.1.99	Ax-2	Ax-3	Cro-8	Hr-9			
14	10	306	10.1.99	17.1.99	?-1	Hs-1	Ax-2				
15	-32	321	10.1.99	10.1.99	Ax-1		Hs-1	Hs-1	Hs-1	Hs-1	
16	-20	338	12.1.99	14.1.99	Bxo-4	Cro-9					
17	-24	265	12.1.99	16.3.99	?-1	?-10	Hr-5				
					-	-	Fac-15	Eac-23	Eai-31	-	
					Dkc-9	Dkc-10	-	Ekc-15	Dkc-2	Dkc-4	
					Dkc-12	Dkc-5	Dkc-32	Dkc-9	Dkc-11	Dkc-15	

Table 1 (Continued)

					Cai-8	Dso-6	X	?-3	Ha-5	Ha-8
18	19	269	14.1.99	20.2.99	Dso-9	-	Dso-4			
					-	-	Eac-25	Eac-39	-	-
					-	Hs-1	Fkc-17	Hs-1	Hs-1	Hs-1
					Hs-1	Cao-3	-	Ha-1	Hs-1	Hs-1
19	13	324	16.1.99	16.1.99	Bxo-4					
20	17	294	16.1.99	16.1.99	Bxo-5					
21	24	296	17.1.99	15.2.99	Dao-6	-				
					Eao-8	Eac-8	-	-	-	Cao-2
					-	Hr-2	Eac-12	Eac-15	-	Cri-18
22	-35	358	17.1.99	17.1.99	Bxo-2					
23	19	230	22.1.99	27.1.99	Eai-8	-				
24	14	169	22.1.99	22.1.99	Hr-2		-	Eao-15	Eso-4	Ha-1
25	27	186	27.1.99	30.1.99	Hr-3	Hr-1				
26	23	169	27.1.99	28.1.99	Ax-1	Hr-1	-	Dro-2		
27	-15	194	27.1.99	27.1.99	Bxo-4					
28	17	169	28.1.99	30.1.99	Hr-2	-				
29	-26	26	3.2.99	8.2.99	Dai-15	-	Dsi-8			
30	-20	346	6.2.99	8.2.99	Hr-1	-	Cso-5	Cso-5	-	Hr-3
31	13	280	9.2.99	20.2.99	?-3	Dao-7	Hr-1			
					Eko-30	Eko-23	Dao-15	-	Eki-26	-
32	-18	254	10.2.99	17.2.99	?-1	Hs-1	Fko-15	Eko-11	-	?-2
					Ha-3	Cso-5	-	Hr-3	-	Ha-6
33	-20	245	11.2.99	11.2.99	Ax-1					
34	-18	240	11.2.99	21.2.99	Hs-1	-				
					Hs-1	Hs-1	Hs-1	-	Hs-1	Hs-1
35	21	262	13.2.99	21.2.99	Dai-12	-	-	-	Ha-2	Ha-3
					-	Ha-6	Eac-22	Eki-18	Eko-17	Cki-14
36	20	234	13.2.99	21.2.99	Hs-2	-	Ha-2			
					-	Ha-3	Ha-4	Ha-2	Hs-4	Cai-10
37	21	223	13.2.99	16.2.99	Ax-3	-	Hr-4			
38	-30	347	13.2.99	13.2.99	Bxo-3		Hs-2	Ax-1		
39	-30	303	15.2.99	18.2.99	Dao-23	Dao-15				
40	25	288	16.2.99	18.2.99	Hr-1	-	Eao-8	Dao-6		
41	16	177	16.2.99	25.2.99	?-1	Hs-1	Ax-2			
					-	Ha-1	Ha-3	-	Ha-3	Ha-5
42	-25	188	16.2.99	17.2.99	Ax-1	Ax-1	-	Ha-1		
43	13	283	20.2.99	20.2.99	Dao-5					
44	-22	188	20.2.99	20.2.99	Ax-1					
45	15	199	21.2.99	21.2.99	Bxo-5					
46	11	197	21.2.99	21.2.99	Ax-2					
47	-18	252	21.2.99	21.2.99	Ax-1					
48	-19	196	21.2.99	21.2.99	Ax-1					
49	-23	194	21.2.99	21.2.99	Ax-3					
50	28	103	23.2.99	5.3.99	Hs-1	-				
					Eac-27	Eai-26	Cri-8	Cri-16	Dri-14	Eai-24
51	-25	97	23.2.99	28.2.99	Dso-3	-	Eki-9	Cki-6	Hk-3	
52	27	74	25.2.99	28.2.99	Bxi-5	Cro-7	Dao-5	Dao-5	Cro-3	Hr-3
53	32	56	27.2.99	6.3.99	Hr-3	Hr-6	Dri-13	Cro-6		
					Dri-15	Cro-2	Dao-21	Dao-16	Eac-15	Dai-12

Table 1 (Continued)

54	-24	141	27.2.99	27.2.99	Ax-2						
55	18	74	28.2.99	27.3.99	Ax-6	Bxo-6					
					Ehi-19	Eho-9	Cri-10	Eac-15	Ekc-14	Ehc-36	
					Hs-1	Cso-2	?-2	?-1	Hs-2	Hs-2	
56	-27	12	28.2.99	8.3.99	?-1	Hr-1					
					Cai-10	Ax-4	Ax-1	Hr-4	Cai-9	Cri-15	
57	-30	182	1.3.99	13.3.99	Ha-1	Ha-1	Ax-2				
					Hs-8	Hs-10	Ha-1	Ha-5	Cai-12	Ha-7	
					Hk-2		Csi-16	Dao-11	Dsi-8	-	
58	-16	90	2.3.99	6.3.99	Ax-4	Cao-4					
59	-15	83	2.3.99	6.3.99	Dro-2	Dso-5	Dro-4	Cro-4	Hr-1		
60	29	65	4.3.99	6.3.99	Ha-2	Ha-2	Cao-5	Cao-4	Hr-1		
61	24	356	4.3.99	6.3.99	Ax-1	Hr-1	Hr-1				
62	-19	65	4.3.99	4.3.99	Ax-2		Ax-1				
63	-20	16	6.3.99	11.3.99	Ax-1	Dao-10					
64	22	275	9.3.99	16.3.99	Cao-5	Dac-15	Dso-8	Cao-5	Ha-2	Dao-11	
					Fkc-47	Fkc-43	Eki-27	-	Eki-21	-	
65	18	275	9.3.99	11.3.99	Hr-1	Ha-1					
66	-24	357	9.3.99	9.3.99	Ax-1		Ha-1				
67	-27	357	9.3.99	9.3.99	Hr-1						
68	16	243	11.3.99	21.3.99	?-2	-					
					-	-	Cai-9	-	Ehc-15	Ehc-19	
69	12	264	16.3.99	16.3.99	Bxo-2		-	-	Ha-2		
70	-28	230	16.3.99	21.3.99	Ha-1	-					
71	19	222	21.3.99	21.3.99	Bxo-6		-	-	-	Hr-3	
72	-11	204	21.3.99	25.3.99	Dai-7	-					
73	-25	185	21.3.99	21.3.99	Cro-3		Hr-2	Bxi-8	Ax-2		
74	-17	162	21.3.99	21.3.99	Ax-2						
75	-21	139	21.3.99	21.3.99	Bxo-2						
76	29	94	23.3.99	27.3.99	Ha-1	Ha-1					
77	23	170	24.3.99	26.3.99	Bxo-12	Dso-3	Hs-2	Hs-1	Hs-1		
78	-24	184	24.3.99	24.3.99	Ax-1		Ax-1				
79	-26	101	26.3.99	26.3.99	Ax-1						
80	11	304	4.4.99	10.4.99	Dro-9	Dai-8					
					Dro-6		Cai-9	Dai-12	Dao-12	Dao-6	
81	20	285	4.4.99	13.4.99	Cao-9	Dao-12					
					Dai-50	-	Cai-14	Dai-24	Dki-24	Dai-27	
82	11	284	4.4.99	4.4.99	Ax-1		Dao-7	Bxo-4			
83	-35	69	4.4.99	4.4.99	Ax-1						
84	-28	4	4.4.99	9.4.99	Dai-12	Dko-21					
85	-30	349	4.4.99	7.4.99	Ha-11	Ha-9	Dko-18	Eho-9	Eho-5	Hh-3	
86	-35	69	4.4.99	4.4.99	Ax-1		Hr-8	Ax-5			
87	-35	269	6.4.99	9.4.99	Ax-2	Hs-1					
88	-17	262	6.4.99	15.4.99	Dao-5	Dao-3	Hr-2	Ax-1			
					Cao-6	Cao-3	Dao-8	Dao-5	Dao-6	-	
89	25	274	8.4.99	8.4.99	Ax-2		-	Ax-1			
90	-28	244	8.4.99	18.4.99	Hr-3	Dro-10					
					-	Hr-1	Dao-10	-	Cso-5	Ha-3	
91	-18	235	8.4.99	16.4.99	?-1	Bxo-2	Hr-1	Ax-1			
					-	Hr-3	Dro-13	-	Dai-26	Dri-9	

Table 1 (Continued)

92	14	274	9.4.99	9.4.99	Ax-4		Ax-2				
93	15	292	10.4.99	10.4.99	Ax-1						
94	-34	234	12.4.99	18.4.99	Dai-9	Dao-7					
					Bxo-6		-	Cro-8	Cro-8	Eri-15	
95	13	273	13.4.99	13.4.99	Ax-2						
96	-20	222	13.4.99	17.4.99	Cro-5		-				
97	-20	143	15.4.99	24.4.99	Cao-7	Cso-9	Dri-14	Dri-16	Dro-9		
					-	Hs-2	Cso-9	Cso-7	Hs-3	Cso-5	
98	9	207	16.4.99	16.4.99	Hr-1		Cri-11	Bxi-7			
99	-24	143	16.4.99	16.4.99	Ax-1						
100	23	211	17.4.99	6.6.99	Cao-5	Dri-10					
					Hk-8	Hk-6	Dao-7	Dao-4	Hh-2	Hk-3	
					Hk-10	Hk-2	Hk-15	Hk-8	Hk-6	Hk-11	
					Ax-1	Ax-2	Hk-5	Hk-2	Ha-1	Ha-1	
101	17	210	17.4.99	17.4.99	Hr-1						
102	14	107	17.4.99	20.4.99	?-2	Cso-4					
					Cao-9	Ha-5	Cao-7	Dai-14	-	Dai-15	
103	16	244	18.4.99	18.4.99	Ax-3		Ha-3	Hs-2	Hs-1	?-1	
104	19	137	19.4.99	20.4.99	Dso-4	Ax-4					
105	33	159	20.4.99	24.4.99	Ax-1		-				
106	31	40	24.4.99	30.4.99	Bxo-2	Cro-3	Cao-8	Cro-6	Hr-1		
					Bxo-2		Cai-9	Cao-11	Cri-11	Dro-5	
107	17	32	24.4.99	2.5.99	Bxo-3	Dao-4					
					Cri-9	Dro-3	Dao-8	Cso-2	Cai-5	Cao-3	
108	22	30	25.4.99	4.5.99	Dao-5	Dai-6	Cao-3				
					Eao-26	Eao-18	Eai-15	Eki-20	Eki-18	Fai-28	
109	16	309	29.4.99	11.5.99	?-1	Dso-5	Eao-11	Dro-5			
					Cso-7	-	Eso-5	Esi-7	Dso-10	Dsi-6	
					?-1		Cso-3	Cso-4	Hs-1	Hs-1	
110	19	295	30.4.99	5.5.99	?-2	Hk-3					
111	26	297	1.5.99	5.5.99	Ha-1	Hr-2	Ha-4	Ha-13	Dai-12	Dri-12	
112	-16	287	1.5.99	2.5.99	Ax-2	Bxo-3	Ha-1	Hr-1	Ax-1		
113	22	340	2.5.99	2.5.99	Ax-3						
114	15	284	2.5.99	2.5.99	Ax-2						
115	-14	328	2.5.99	5.5.99	Bxo-3	Bxi-5					
116	14	28	4.5.99	4.5.99	Ax-1		Cao-4	Dso-5			
117	20	339	4.5.99	5.6.99	Cao-6	Csi-12					
					Hh-1	Hh-2	-	Esi-9	Eao-11	?-6	
					Hh-4	Hh-2	Hh-3	Hh-3	Hk-4	Hh-3	
					Hh-1		Hh-6	-	Hh-1	Hh-1	
118	18	249	4.5.99	9.5.99	?-3	Dso-3					
119	4	226	5.5.99	9.5.99	?-2	-	-	Cro-4	Dri-7	Dro-3	
120	-40	310	5.5.99	5.5.99	Ax-1		Cao-5	Cai-8	Cro-5		
121	-17	282	5.5.99	5.5.99	Ax-1						
122	-17	226	5.5.99	16.5.99	?-2	-					
					Cri-12	Dai-11	Hs-1	Hs-3	Hs-4	Cao-6	
123	19	347	7.5.99	7.5.99	Hs-2		Dai-11	Dai-14	Dao-5	Ha-1	
124	10	305	7.5.99	11.5.99	Cro-9	Dro-8					
125	13	226	7.5.99	11.5.99	Dro-5	Dao-10	Bxi-7	Bxi-5	?-4		
126	-25	233	7.5.99	12.5.99	Dao-6	Dai-16	Dao-6	Bxo-3	Ax-1		

Table 1 (Continued)

127	-27	200	7.5.99	14.5.99	?-3	Eao-7	Dai-23	Dai-28	Dai-18	Dao-8
					Ha-1	Bxo-6	Eao-10	Eao-13	Ero-15	Cao-11
128	14	291	8.5.99	8.5.99	Ax-1					
129	17	289	8.5.99	8.5.99	Ax-1					
130	14	284	8.5.99	8.5.99	Ax-1					
131	21	194	8.5.99	19.5.99	?-7	Eac-25				
					Eai-17	Eai-21	Eac-25	Eac-28	Eac-27	Eac-17
132	20	294	9.5.99	9.5.99	Ax-2		Eai-20	Eai-21	Eai-17	Dao-3
133	2	230	9.5.99	9.5.99	Ax-2					
134	-20	148	11.5.99	23.5.99	?-1	Hs-1				
					Hs-1	Hs-1	Hs-1	Hs-1	Hs-2	Cso-6
					Hr-1		Hs-2	Hs-1	Hs-1	Ha-1
135	3	147	12.5.99	12.5.99	Ax-1					
136	37	97	14.5.99	27.5.99	?-1	Hh-1				
					Hh-6	-	Hh-3	Hh-1	Hh-5	Hh-5
					Hk-6	Dki-7	Hk-7	Hk-8	Hk-4	Hk-3
137	-22	123	14.5.99	25.5.99	Bxo-3	Dai-13	Dki-8			
					Eai-20	Fai-25	Eai-17	Eao-12	Eao-18	Eai-17
138	23	181	15.5.99	19.5.99	Dro-3	Cao-5	Fai-23	Fai-12	Fao-6	?-2
139	5	150	15.5.99	15.5.99	Ax-1		Cao-3	Cri-4		
140	-33	212	15.5.99	18.5.99	Ax-2	X				
141	-20	88	18.5.99	28.5.99	Cri-7	Cri-12	X	Cro-5		
					Cao-5	Hs-1	Dai-14	Dai-17	Dai-21	Csi-13
142	26	63	19.5.99	19.5.99	Ax-1		Dso-8	Dai-10	?-1	
143	25	163	20.5.99	22.5.99	Dai-1	Dao-9				
144	-25	49	20.5.99	20.5.99	Ax-1		?-2			
145	-15	36	20.5.99	30.5.99	?-3	Eao-8				
					Cao-18	Cao-16	Eao-19	Eko-12	Eao-14	Cao-16
146	31	20	21.5.99	30.5.99	?-2	Cso-5	Cro-15	Bxi-6	Ax-1	
					Hs-1	Hs-2	Cso-5	Dsi-10	Cso-4	Cso-6
147	25	355	25.5.99	30.5.99	Bxi-4	Csi-12	Hr-2	Ax-2		
148	18	344	25.5.99	4.6.99	Ax-1	Hr-6	Cao-6	Hr-2	Hr-3	Ax-4
					Dko-12	Dho-6	Dao-8	Dai-20	Dao-13	Dki-16
149	17	328	26.5.99	26.5.99	Ax-1		-	Dko-6	?-2	
150	15	305	27.5.99	5.6.99	Ha-1	Hs-1				
					-	Hs-1	Hs-1	Hs-1	Cso-4	Cso-2
151	-15	357	27.5.99	27.5.99	Ax-1		Ha-2	Hr-1		
152	-31	294	27.5.99	1.6.99	?-1	Ha-4				
153	13	287	28.5.99	9.6.99	?-1	Dri-9	Ha-5	Ha-6	Ha-6	Ax-5
					Dkc-18	Dkc-14	Dai-23	Dki-19	Dkc-22	-
					?-1		Dko-18	Dai-20	Dai-11	Dao-3
154	-26	292	28.5.99	1.6.99	?-4	Ha-8				
155	22	351	29.5.99	29.5.99	Cro-4		Dao-6	Dao-10	Dao-4	
156	25	336	29.5.99	29.5.99	Ax-1					
157	22	325	29.5.99	29.5.99	Bxo-2					
158	24	347	31.5.99	1.7.99	Ax-1	Cai-17				
					Ha-2	Ha-6	-	Daki-11	?-1	Ha-1
					-	Hs-1	Ha-4	Hs-3	-	-
159	-17	292	31.5.99	27.7.99	Cri-8	Dkc-19	Hs-1	-	Hs-1	Hs-1

Table 1 (Continued)

					Eki-20	Eki-16	-	Dkc-27	Dkc-21	Eki-25
					Fac-26	Fkc-56	Ekc-7	?-1	-	-
					Ekc-22	Eac-9	-	Fac-40	Eac-50	Ekc-25
					Cro-8	X	Eai-9	?-2	Ha-4	Ha-5
160	-15	233	1.6.99	9.6.99	?-2	-	X			
					Hr-2	Hr-3	Hs-1	Hs-1	Hs-1	Hr-2
161	-32	287	3.6.99	3.6.99	Ax-1		Hr-2			
162	-15	280	3.6.99	6.6.99	Cro-5	Dso-7				
163	-25	251	3.6.99	6.6.99	Bxo-6	Ax-1	Cro-7	Ax-2		
164	17	196	4.6.99	6.8.99	?-1	Dai-7	X	Cro-4		
					Eac-34	Eac-31	Cao-6	Dao-16	Cao-8	Eac-10
					?-4	?-2	Fkc-40	Fkc-43	Fkc-31	Ekc-9
					Eki-32	Eko-13	Ha-3	Cao-4	Dai-8	Eki-44
					-	X	Eko-8	Eko-16	-	Eko-6
165	-15	186	4.6.99	16.6.99	?-1	Hs-1	?-1			
					Ha-2	Ha-2	Hs-1	Hs-1	Hs-1	Hs-1
					?-1		Ha-2	Ha-1	Ha-1	Ha-1
166	10	317	5.6.99	6.6.99	Ax-5	?-2				
167	26	304	5.6.99	6.6.99	Cro-5	Bxo-4				
168	28	209	5.6.99	15.6.99	Ax-3	Cri-16				
					Eai-24	Eao-15	Dao-16	Ekc-23	Ekc-25	Eki-26
169	-21	187	5.6.99	15.6.99	Ha-1	Dso-9	Cao-9	Ha-2	?-1	
					Cao-6	Cao-5	dho-8	Dao-17	Dao-16	Cao-6
170	14	200	6.6.99	14.6.99	Ax-3	Cao-2	Hr-3	Hr-1	Ax-1	
					Cri-9	Bxo-3	Cro-5	Ax-1	Ax-5	Bxo-6
171	-20	235	6.6.99	6.6.99	Ax-1		Ax-1			
172	-30	178	6.6.99	17.6.99	Bxo-6	Cro-6				
					Cri-17	Cai-15	Bxo-5	Ax-1	Ax-2	Ax-2
173	19	202	8.6.99	15.6.99	Ax-3	Dai-4	Dai-11	Dao-4	Dso-4	?-1
					Cko-8	Hk-1	Dai-15	Dao-9	Dao-11	Cao-9
174	18	293	8.6.99	8.6.99	?-1					
175	20	245	9.6.99	11.6.99	Hs-7	Hr-3				
176	11	185	9.6.99	10.6.99	Cso-3	Ax-1	Ax-2			
177	-38	182	9.6.99	10.6.99	Ax-1	Ax-1				
178	-21	128	9.6.99	21.6.99	Hk-1	Hk-3				
					Hk-9	Hk-1	Hk-1	Hk-6	Hk-7	Hk-6
179	24	176	11.6.99	12.6.99	Hr-1	Ax-4	Hk-1	Hk-2	Hk-1	
180	27	134	11.6.99	20.6.99	Bxi-6	Cri-9				
					Dai-11	Cai-12	Cai-20	Dac-31	Eac-25	Eai-21
181	-13	99	11.6.99	19.6.99	?-1	Dao-9	Hr-1			
					Dro-8	Cro-2	Eai-21	Dao-11	Dao-13	Dao-10
182	36	71	13.6.99	23.6.99	?-3	Dho-3				
					Cho-5	Hh-2	Dho-6	Dho-5	Dho-5	Cho-9
183	18	110	15.6.99	15.6.99	Ax-1		Hs-8	Hs-6	Hs-1	
184	-22	94	15.6.99	18.6.99	Ax-1	Ax-3				
185	28	98	16.6.99	22.6.99	Ha-1	X	Cao-10	Ax-2		
					Dso-3		Dri-11	Cao-11	Dao-3	Dso-4
186	34	131	16.6.99	16.6.99	Ax-1					
187	13	75	17.6.99	17.6.99	Ax-5					



Table 1 (Continued)

188	20	343	20.6.99	23.6.99	Hr-2	Ha-5					
189	20	332	20.6.99	3.7.99	?-1	Hh-2	Ax-2	Ha-5			
					-	Ha-9	Hh-2	Hh-1	-	-	
					Ha-1	?-1	Ha-11	-	Ha-2	Ha-2	
190	18	112	21.6.99	21.6.99	Ax-2						
191	24	326	21.6.99	1.7.99	Ha-5	Eai-8					
					Eki-23	Dko-27	Fai-11	-	-	-	
192	13	328	21.6.99	28.6.99	?-6	Dkc-9	-	Dao-7	Ha-2		
					Dai-19	Dai-20	Dac-10	-	-	-	
193	25	30	22.6.99	22.6.99	Ax-1						
194	25	20	22.6.99	22.6.99	Ax-5						
195	17	353	22.6.99	22.6.99	Ax-2						
196	17	320	22.6.99	1.7.99	Bxo-3	Dso-2					
					Dai-17	-	-	-	-	Dao-10	
197	-17	318	22.6.99	30.6.99	Dro-8	Dao-5	Dao-3	Cai-8			
					Cao-3	-	-	-	-	Ha-5	
198	18	47	23.6.99	23.6.99	Hs-1		Ax-4				
199	18	297	23.6.99	2.8.99	?-1	-					
					-	Hk-10	-	-	Hk-5	Hk-18	
					Hk-3	?-1	Hk-12	Hk-9	Hk-8	Hk-4	
					Hs-1	Hs-1	Hs-1	Hs-1	Hs-1	Hs-1	
					-	-	Hs-1	Hs-1	Hs-1	Hs-1	
200	16	310	23.6.99	23.6.99	Ax-3		?-1				
201	-14	47	23.6.99	23.6.99	Ha-2						
202	20	42	27.6.99	27.6.99	Ax-1						
203	28	335	27.6.99	27.6.99	Ax-3						
204	22	336	27.6.99	2.7.99	Dac-28	Dac-33					
205	-20	323	27.6.99	27.6.99	Ax-1		-	Dao-7	Cai-8	?-3	
206	-16	312	27.6.99	28.6.99	Ax-1	Ax-3					
207	-24	249	27.6.99	31.8.99	?-1	Dai-12					
					Fkc-21	Fkc-26	-	Eac-20	Fkc-40	Fkc-49	
					?-1	?-2	Fkc-39	Fkc-32	Fkc-11	?-19	
					Dki-8	Dki-15	Dki-12	Dki-13	Dki-10	Dko-7	
					Dki-11	Dki-7	-	-	Dki-22	Dko-5	
208	-11	319	28.6.99	28.6.99	Ax-1		?-2				
209	18	208	30.6.99	6.7.99	?-1	Ha-2					
					Ax-3		Ha-1	Hr-1	Hr-1	X	
210	29	325	1.7.99	2.7.99	Ax-2	Hr-2					
211	11	303	1.7.99	1.7.99	Hr-2						
212	17	214	1.7.99	1.7.99	Ax-1						
213	14	282	2.7.99	7.7.99	Bxo-6	Dao-14					
214	21	179	2.7.99	14.7.99	Hk-1	Hk-2	Dao-7	Dao-14	Dao-5	?-1	
					Ha-1	Cao-6	Hk-1	Hk-2	Ha-4	Ha-2	
					?-4		-	Cao-8	-	Dai-7	
215	-31	186	2.7.99	13.7.99	Ha-1	Hk-1					
					Chi-8	Cho-7	Hh-2	Hh-2	Hh-1	Hh-3	
216	17	182	3.7.99	3.7.99	Ax-1		-	Cho-8	-	Hk-3	
217	20	156	4.7.99	7.7.99	Ha-1	Cao-5					
218	-18	180	4.7.99	4.7.99	Hr-1		Dro-6	Ax-2			
219	-18	166	4.7.99	8.7.99	Ha-1	Ha-3					

Table 1 (Continued)

220	25	209	6.7.99	6.7.99	Ax-4		Hr-2	Ha-2	Ax-1	
221	-31	218	6.7.99	7.7.99	Cro-3	Cso-4				
222	14	162	7.7.99	7.7.99	Ax-2					
223	-22	201	7.7.99	11.7.99	Dai-8	Dai-11				
224	-20	118	7.7.99	18.7.99	Ha-1	Ha-1	Dai-20	-	Eai-10	
					Dri-8	Cai-9	Ha-1	-	Ha-1	-
225	-18	104	8.7.99	11.7.99	?-1	Bxo-6	Bxi-9	-	Dac-10	Dao-4
226	-17	218	8.7.99	8.7.99	Bxo-7		-	Ax-1		
227	-13	97	8.7.99	20.7.99	?-1	Eao-6				
					Fai-19	Fai-22	-	Fai-18	-	Fai-14
					?-2		-	Fao-11	Fao-9	Eao-9
228	22	230	9.7.99	9.7.99	Cri-7					
229	21	154	11.7.99	11.7.99	Bxo-3					
230	10	55	11.7.99	22.7.99	?-1					
					Ha-7	Ha6	Hk-2	Hk-2	Hk-9	-
231	18	113	11.7.99	19.7.99	Dai-25		Ha-8	Ha-4	Ha-4	Hr-3
					Dai-13	Dao-5	Dai-29	Eao-18	Eai-25	-
232	-21	188	11.7.99	13.7.99	Cro-3		Dao-3			
233	41	96	13.7.99	13.7.99	Ax-1		Cro-3			
234	-18	48	13.7.99	14.7.99	Ax-1	Hs-1				
235	20	153	14.7.99	14.7.99	Ax-1					
236	43	144	15.7.99	15.7.99	Bxo-3					
237	45	133	17.7.99	17.7.99	?-1					
238	20	333	17.7.99	18.9.99	?-1	Eki-8				
					Fkc-37	Fkc-55	Ekc-14	Fkc-20	Fkc-34	Fkc-44
					Ekc-10	?-3	Fkc-52	Fkc-38	Fkc-35	Ekc-16
					Hk-5	Hk-7	?-1	Hk-6	Hk-5	Hk-10
					Hh-3		Hk-11	Hk-16	Hk-10	Hk-7
239	11	66	18.7.99	21.7.99	Dro-3	Dao-8	Hh-1	?-1		
240	-9	331	18.7.99	19.7.99	?-1	Hr-1	Cao-7	Hs-1		
241	25	327	19.7.99	20.7.99	Hr-1	Ax-1				
242	30	69	20.7.99	21.7.99	Bxo-3	Ax-1				
243	38	36	20.7.99	25.7.99	Bxo-4	Dai-11				
244	20	48	22.7.99	23.7.99	Hr-2	Cro-2	Dkc-16	Dkc-7	Dkc-10	?-7
245	13	341	23.7.99	25.7.99	Ha-1	Cro-5				
246	23	316	23.7.99	23.7.99	Ax-2		Cro-4			
247	-24	263	23.7.99	30.7.99	?-1	Hs-1				
					Hs-1	Ha-2	Hs-1	Hs-1	Cso-2	Hs-1
248	26	322	24.7.99	25.7.99	Ax-2	Ax-2				
249	21	297	25.7.99	25.7.99	Ax-1					
250	-17	242	25.7.99	30.7.99	?-7	Dao-6				
251	-29	235	25.7.99	1.9.99	?-2	Hk-3	Eai-12	Eao-10	Eai-8	Eri-10
					-	-	Hk-5	Hk-5	Dkc-4	Dkc-9
					?-4	?-1	Dkc-16	Dkc-9	Dki-10	Dki-5
					Hk-10		Hk-4	Hk-4	-	Hk-8
					Ha-2		Hk-18		Hk-12	Hk-2
252	23	225	26.7.99	30.7.99	Ha-1	Cao-3				
253	21	293	27.7.99	27.7.99	Ax-1		Dao-4	Ha-4	Ax-2	
254	26	203	27.7.99	9.8.99	?-1	?-3				

Table 1 (Continued)

					Ekc-47	Fkc-60	Ekc-21	Ekc-28	-	-
					-	?-5	Fkc-31	Fkc-44	Fkc-40	-
255	-15	267	27.7.99	2.8.99	Ha-5	Dai-17				
					Ha-2		Dai-14	Dai-23	-	-
256	16	303	28.7.99	28.7.99	Ax-1					
257	29	297	28.7.99	30.7.99	Hr-2	Cso-2				
258	-23	245	28.7.99	4.8.99	Bxo-2	Cai-7	Cri-4			
					Cai-11	Bxo-2	Cai-8	-	-	Bxo-5
259	13	297	29.7.99	30.7.99	Cso-4	Ha-2				
260	19	245	2.8.99	2.8.99	Bxo-5					
261	18	181	2.8.99	9.8.99	Cri-9	Dai-11				
					-	Hr-4	Dai-14	Dai-17	Cai-19	-
262	25	177	2.8.99	2.8.99	Hr-1					
263	-32	128	2.8.99	14.8.99	?-1	Ha-1				
					-	Eai-5	Dai-7	Cai-13	Dao-7	-
					?-1		Dso-2	Cso-2	Hs-1	Hs-1
264	-20	249	2.8.99	28.9.99	Dai-17	Dko-12				
					Hh-3	Hh-3	Eko-10	Eko-5	Hk-2	Hk-3
					Hk-4	-	-	Hh-2	Cko-9	-
					Dso-3	-	Hk-2	Hk-1	?-1	?-1
					Cso-4	Cso-2	-	Dso-12	Dso-14	Cso-13
265	-22	249	2.8.99	4.8.99	Dao-7	Dao-6	Hs-1			
266	-22	116	3.8.99	3.8.99	Hr-2		Dro-3			
267	20	173	5.8.99	6.8.99	Ax-3	Ax-3				
268	-35	197	5.8.99	6.8.99	Ha-3	Hr-1				
269	-20	163	6.8.99	6.8.99	Ax-1					
270	-15	162	6.8.99	10.8.99	Bxo-4	-				
271	-14	94	6.8.99	16.8.99	Hr-2	-	-	Hr-1	Ax-1	
					Hs-2	Hs-1	-	Ha-5	Ha-3	Ha-2
272	-11	84	6.8.99	6.8.99	Ax-1		Hs-1	Hs-1	Hr-1	Hr-1
273	15	181	9.8.99	10.8.99	Hr-2	?-2				
274	24	105	9.8.99	9.8.99	Hr-2					
275	-16	88	9.8.99	17.8.99	Dai-16	Dai-30				
					Csi-7	Hs-2	Eai-32	Eki-30	Eki-31	Eai-12
276	-26	19	11.8.99	12.8.99	?-3	Dai-4	?-1			
277	22	179	12.8.99	15.8.99	?-3	Ha-4				
278	2	27	13.8.99	13.8.99	Ax-1		Hr-4	Ax-6		
279	12	347	13.8.99	13.8.99	Hs-1					
280	-21	2	14.8.99	16.8.99	Ax-4	Cro-4				
281	-14	52	15.8.99	15.8.99	Ax-1		Cro-2			
282	-11	47	16.8.99	19.8.99	Cro-6	Cro-3				
283	16	352	18.8.99	21.8.99	Cri-11	Dai-14	Cro-3	Ha-1		
284	23	328	19.8.99	20.8.99	Ax-1	Ax-3	Dao-10	Hr-2		
285	24	332	22.8.99	25.8.99	Dri-11	Dro-11				
286	-25	238	22.8.99	1.9.99	Cao-5	Cai-11	-	Dro-5		
					Dai-25	-	-	Dai-24	Dai-23	-
287	19	321	25.8.99	26.8.99	Cro-3	Hr-2	Dai-21	Cai-13	Dao-5	
288	16	297	25.8.99	28.8.99	Hr-1	Hr-3				
289	9	220	25.8.99	25.8.99	Hr-2		-	Ax-1		
290	27	195	25.8.99	28.8.99	Dro-3	Cro-4				

Table 1 (Continued)

291	19	190	25.8.99	6.9.99	Ha-2 Dai-19 ?-1	Ha-3 Cai-8 -	- - -	Bxo-5 Dai-26 Ha-6	- - -	Dai-31 Ha-2
292	8	183	25.8.99	1.9.99	?-1 Hs-1	Cao-3 -	- -	Ha-4 Cso-3	Cso-3	Hs-2
293	-34	182	26.8.99	30.8.99	?-5	-	-	-	-	Bxo-4
294	20	211	28.8.99	3.9.99	Bxi-20 Cao-4	- -	Cro-5 Eki-41	- Eai-30	Eai-20	-
295	26	173	28.8.99	30.8.99	Ax-2	-	-	-	-	-
296	33	190	30.8.99	30.8.99	Ax-1	-	Ax-1	-	-	-
297	18	140	30.8.99	9.9.99	Hr-2 Dri-19	Hr-1 Dri-17	Dro-4 -	- -	Cro-2 Cro-2	-
298	13	119	30.8.99	30.8.99	Ax-1	-	Dri-14	Cro-3	Cro-2	-
299	-29	180	30.8.99	30.8.99	Ax-3	-	-	-	-	-
300	-24	175	31.8.99	5.9.99	Hr-3	Cao-5	-	-	-	-
301	17	184	1.9.99	1.9.99	Ax-1	-	-	Bxi-8	-	Hr-1
302	10	159	3.9.99	8.9.99	Cro-6	-	-	-	-	-
303	-24	124	3.9.99	3.9.99	Bxo-6	-	Dro-7	Dro-8	Bxo-10	?-3
304	10	187	5.9.99	6.9.99	Ha-1	?-1	-	-	-	-
305	19	117	5.9.99	9.9.99	Bxo-4	Cro-10	-	-	-	-
306	14	25	6.9.99	18.9.99	?-1 Dai-25 ?-7	Ha-6 Dai-37 -	Cao-4 Ha-6 Eac-36	Ax-4 Dri-14 Ekc-19	Ax-2 Dai-21 Ekc-28	Dai-37 Ekc-32
307	-30	117	7.9.99	9.9.99	Cai-10	Dro-5	-	-	-	-
308	-25	8	7.9.99	14.10.99	?-1 Ekc-27 ?-1 Hs-1	Eko-6 Esi-28 Hs-1 Ha-3	Dro-6 Eko-12 Dso-15 Hs-1	Eki-37 Dsi-25 -	Eki-16 Eko-9 -	Eki-13 Cko-3 Hs-1
309	23	98	8.9.99	8.9.99	Bxo-2	-	Ha-1	Ax-1	-	-
310	12	8	8.9.99	18.9.99	Ha-1 Hs-2	Ha-2 Ha-2	Vao-12	Hs-6	Hs-3	Hs-3
311	-16	85	8.9.99	9.9.99	Ax-2	Hr-4	Ha-1	Ha-2	Ha-1	-
312	-17	328	11.9.99	11.9.99	Ax-1	-	-	-	-	-
313	22	2	12.9.99	7.10.99	Dai-21 Eso-6	Dai-26 Hs-1	Ekc-21 Hs-2	Eko-25 Cao-8	Eki-19	Eko-10
314	19	319	13.9.99	13.9.99	Ax-1	-	-	-	-	-
315	11	302	13.9.99	18.9.99	?-1	Hr-3	-	-	-	-
316	12	295	13.9.99	24.9.99	?-3 -	?-9 -	Ha-5 Dai-5	Ax-4 Cai-18	Ax-6 Dai-43	Ax-1 Dri-34
317	19	43	16.9.99	16.9.99	Cro-2	-	Dri-22	Dao-12	Cao-6	Ax-2
318	22	298	16.9.99	16.9.99	Ax-2	-	-	-	-	-
319	-12	271	18.9.99	18.9.99	Ax-4	-	-	-	-	-
320	22	300	21.9.99	21.9.99	Ax-2	-	-	-	-	-
321	19	207	21.9.99	1.10.99	Hs-5 Ha-3	Hs-1 Ha-2	Hs-1 Hs-1	Hs-1 Hs-1	Hs-1 Hs-1	Cso-3
322	20	203	21.9.99	21.9.99	Ax-1	-	Hs-1	Hs-1	Hs-1	-
323	12	304	22.9.99	22.9.99	Ax-1	-	-	-	-	-
324	-7	254	22.9.99	23.9.99	Bxo-2	Bxo-4	-	-	-	-
325	-26	258	23.9.99	23.9.99	Ax-1	-	-	-	-	-
326	-11	189	23.9.99	26.9.99	Bxo-11	Cri-11	-	-	-	-

Table 1 (Continued)

327	-1	212	26.9.99	26.9.99	Ax-2		Cro-7	Ax-2			
328	20	114	27.9.99	2.10.99	Ha-2	Ha-2					
329	21	199	28.9.99	1.10.99	Bxo-5	Cao-6	Hs-2	Hs-2	Hs-1	Hr-2	
330	-13	160	28.9.99	30.9.99	Hr-1	Bxo-6	Cro-5	Hr-1			
331	13	84	29.9.99	6.10.99	?-1	Cso-3	Ax-3				
					Ha-1	Ax-3	Cso-2	Ha-2	Ha-3	Ha-1	
332	-13	94	29.9.99	3.10.99	Ax-1	Hr-3					
333	-8	163	30.9.99	30.9.99	Ax-2		Cao-2	Hr-2	Ax-1		
334	21	45	2.10.99	14.10.99	?-1	Cko-5					
					-	-	Cko-7	Hk-3	Hh-4	Dhi-8	
335	-29	162	2.10.99	3.10.99	Ax-1	Bxo-2	Hh-2	Cho-8	Hh-3	Hh-1	
336	-28	97	2.10.99	7.10.99	Ax-1	Ax-2					
337	-16	98	2.10.99	2.10.99	Ax-1		Cao-5	Cao-9	Dao-8	Dao-3	
338	-21	52	2.10.99	13.10.99	Hr-1	Ha-2					
					-	-	Dai-10	Esi-8	Cso-5	Ija-3	
339	17	38	3.10.99	5.10.99	Hr-1	Ha-3	Hs-1	Hs-3	Hs-2	Hs-1	
340	-18	43	3.10.99	11.10.99	Cro-3	Dai-13	Ax-1				
					-	Ha-1	Dai-6	Dao-6	Dao-11	-	
341	-21	34	3.10.99	7.10.99	?-1	Ha-2	Ax-1				
342	14	33	4.10.99	14.10.99	Cao-6	Ha-2	Hs-1	Hs-2	Ha-3		
					X	X	Dai-13	Dai-23	-	-	
343	19	86	5.10.99	6.10.99	Dao-2	Bxo-6	Ha-1	X	Ax-2		
344	14	71	5.10.99	11.10.99	Dao-7	Dai-22					
					Ha-1		Dai-12	-	-	Ha-2	
345	19	352	7.10.99	14.10.99	Ha-1	-					
					Cai-12	Cao-5	-	Ax-2	Cao-4	Dao-5	
346	21	50	10.10.99	10.10.99	Ax-1						
347	22	316	10.10.99	15.11.99	Eki-10	Ekc-20					
					Ehi-19	-	Ekc-35	Ekc-39	Ehc-25	-	
					-	-	Hh-2	Ha-1	Hs-2	Hs-1	
					Hs-1		Hs-3	-	-	Hs-1	
348	14	316	10.10.99	12.10.99	Ax-1	Ha-1					
349	10	317	10.10.99	14.10.99	Ax-3	Dao-6	Ax-1				
350	-10	1	10.10.99	10.10.99	Ax-2		Dao-5	Cro-7	Cai-7	Cai-10	
351	21	352	11.10.99	11.10.99	Ax-1						
352	9	307	11.10.99	18.10.99	Dai-12	Eai-18					
					-	Ax-1	Eai-18	Bxi-21	-	X	
353	11	291	11.10.99	15.11.99	?-5	Eki-20					
					-	Fkc-75	Ekc-31	Ekc-48	-	Fkc-53	
					Ekc-48	-	Fkc-11	Fkc-22	-	-	
354	21	300	12.10.99	18.10.99	Bxo-2	Cai-13	-	Eai-39	Eai-29		
					Eai-26		Dai-18	-	Eai-20	-	
355	17	279	12.10.99	14.10.99	Ax-2	X					
356	24	359	13.10.99	14.10.99	Ax-1	Ax-1	Bxo-2				
357	24	343	13.10.99	13.10.99	Bxo-3						
358	-13	316	13.10.99	13.10.99	Ax-4						
359	-21	241	16.10.99	18.10.99	Ax-1	-					
360	-15	235	18.10.99	15.12.99	Ax-3	-	Hs-1				
					Eko-15	Eko-7	-	-	-	-	
					-	Fkc-42	Eko-9	?-1	?-6	-	

Table 1 (Continued)

					Ekc-32	-	Fkc-33	-	-	-
					Ha-2	-	Ekc-30	Ekc-28	Ha-1	-
361	19	321	18.10.99	18.10.99	Hs-1		Bxo-4			
362	18	256	18.10.99	18.10.99	Cai-5					
363	17	211	24.10.99	28.10.99	Cro-9	Hr-5				
364	8	120	24.10.99	4.11.99	?-7	Eki-17	Hr-3	Hr-4	?-1	
					-	Eki-16	Ekc-30	Eki-37	Eki-21	Eki-51
365	-12	168	24.10.99	1.11.99	Eki-45	Ekc-63	Eko-16	Eko-7	Dao-3	Ha-2
					-	Fso-8	Fkc-80	Fkc-70	Fkc-31	Fkc-40
366	-25	148	24.10.99	2.11.99	Eai-20	Eai-20	?-4			
					-	Eac-7	Eao-20	Esi-25	Eai-16	Eac-27
367	-16	150	25.10.99	2.11.99	Ax-3	Dao-4	Eai-12	Eao-5		
					Ha-3	Ha-4	Cao-3	Ha-4	Cao-9	-
368	27	187	26.10.99	26.10.99	Hr-2		Ha-1			
369	-15	90	26.10.99	4.11.99	?-2	Hk-2				
					Ha-6	Ha-6	Cki-7	Cki-9	-	Ha-6
370	10	128	27.10.99	28.10.99	Ax-6	Cao-3	Ha-7	Cai-9		
371	11	75	28.10.99	7.11.99	Dai-6	Dao-6				
					Dai-13	Dai-12	-	Dao-11	Dao-12	Dao-8
372	19	113	29.10.99	31.10.99	Ax-7	-	-	Cai-13	Cro-4	
373	-15	117	29.10.99	29.10.99	Ax-2		Ax-4			
374	-18	108	29.10.99	29.10.99	Ax-2					
375	-21	72	29.10.99	8.11.99	Ax-1	-				
					Ehi-18	-	Dao-12	Eai-36	Eko-28	Ehi-31
376	21	34	31.10.99	8.11.99	Hs-1	Hs-2	Eho-15	Eho-9	?-2	
					Dsi-9	Dso-4	Ha-2	Cai-16	Hs-1	-
377	10	130	1.11.99	1.11.99	Ax-4		Dso-5			
378	12	83	2.11.99	4.11.99	Ax-1	X				
379	-14	53	3.11.99	6.11.99	Ax-1	Hr-4	Cri-4			
380	14	28	4.11.99	4.11.99	Ax-1		X	Ax-3		
381	30	19	4.11.99	4.11.99	Ax-1					
382	-17	45	4.11.99	4.11.99	Bxi-9					
383	39	17	6.11.99	11.11.99	Cri-11	Dai-21				
384	18	14	6.11.99	6.11.99	Bxo-3		Eso-13	-	-	Eao-11
385	19	346	6.11.99	14.11.99	Bxo-4	Dri-14				
					-	-	Dai-21	-	-	Eac-40
386	19	308	6.11.99	11.11.99	Ha-1	Cai-8	?-4			
387	-7	332	6.11.99	11.11.99	Ha-3	Ha-6	Cai-10	-	-	Hr-4
388	14	328	8.11.99	13.12.99	Dai-23	-	Hs-2	-	-	Ha-2
					Fko-29	Fko-14	-	Fkc-62	-	-
					Hs-6	Hh-6	?-2	Hk-2	Hk-4	Hh-6
					Cso-5	-	-	-	Hk-3	-
389	19	293	8.11.99	11.11.99	Cso-2	-	?-1			
390	4	286	8.11.99	11.11.99	?-1	-	-	Ha-2		
391	12	279	8.11.99	19.11.99	Hk-3	-	-	Ax-1		
					Ha-9	Ha-13	-	Hk-9	-	-
392	7	6	11.11.99	11.11.99	Dao-3		-	-	-	Dro-5
393	-9	236	11.11.99	11.11.99	?-4					
394	18	211	14.11.99	22.11.99	Hk-8	Hk-11				

Table 1 (Continued)

					-	Eac-18	-	-	-	Ekc-29
395	-15	249	14.11.99	19.11.99	Cao-9	Cao-7	Eai-27			
396	42	295	15.11.99	15.11.99	Dro-7		-	-	-	Ax-4
397	19	238	15.11.99	22.11.99	Bxo-7		-			
					Dai-11	Eai-8	-	-	Eai-8	-
398	19	136	19.11.99	19.11.99	Ax-2					
399	5	142	19.11.99	28.11.99	Hr-2					
					-	X	Dai-11	Dai-11	-	-
400	-13	266	19.11.99	19.11.99	Dao-9		Cai-5	Bxo-2		
401	-18	219	19.11.99	19.11.99	Cro-2					
402	-12	178	19.11.99	22.11.99	Ha-4					
403	-16	174	19.11.99	28.11.99	Dai-13		X	Ax-2		
					-	Fkc-18	Ekc-23	Ekc-31	-	-
404	1	166	19.11.99	28.11.99	Ax-1		Fkc-11	?-8		
					-	Hs-2	Dai-6	Dai-18	-	-
405	-14	158	19.11.99	28.11.99	Cao-3		Hs-2	?-3		
					-	Cri-7	Bxi-7	Cri-21	-	-
406	-32	160	19.11.99	19.11.99	Ax-1		Cro-2	Bxi-5		
407	-25	135	21.11.99	22.11.99	Ax-1	Ax-2				
408	-11	111	21.11.99	22.11.99	?-1	Hr-3				
409	35	187	22.11.99	22.11.99	Ax-5					
410	-5	178	22.11.99	22.11.99	Bxo-2					
411	-26	145	22.11.99	22.11.99	Ax-2					
412	-20	136	22.11.99	22.11.99	Ax-4					
413	-17	118	22.11.99	26.12.99	Ax-3					
					Eac-38		-	-	Cai-33	Eai-32
					Hh-2		Eai-14	Eko-11	Hh-1	Hh-1
					-	Hk-2		-	-	-
414	-11	166	26.11.99	28.11.99	Dro-3	Hr-1				
415	-13	62	26.11.99	6.12.99	Cso-2	Csi-13	Ha-1			
					Eko-29	Dko-8	Dac-37		Eki-15	Dki-30
416	10	97	27.11.99	4.12.99	Hr-3	Csi-10	Dko-6	Hk-4	Hk-1	
					Ekc-5	?-1		Eac-23	Ekc-26	Fkc-38
417	13	127	28.11.99	28.11.99	Ax-1					
418	-10	84	28.11.99	28.11.99	Ax-4					
419	32	23	30.11.99	2.12.99	Ax-1	Cao-7				
420	-17	100	1.12.99	2.12.99	Hs-4	Hla-2	Bxo-4			
421	-16	82	1.12.99	1.12.99	Ax-1					
422	28	39	2.12.99	4.12.99	Ax-3	X				
423	20	37	2.12.99	2.12.99	Ax-4		Bxi-5			
424	11	343	2.12.99	6.12.99	Ax-2	Hr-1				
425	10	315	3.12.99	4.1.00	?-8	Fki-15	Hr-2	X	Ha-4	
					Fko-12		Fki-14	Fki-17	-	-
					?-2	Ha-2	Fho-12		Fho-6	-
426	39	31	4.12.99	4.12.99	Ax-2				Ha-3	
427	10	290	5.12.99	13.12.99	Ax-1	Hla-5				
					Bxi-15				Dai-10	-
428	13	327	6.12.99	6.12.99	Ax-2		Cro-3			
429	18	241	9.12.99	13.12.99	Hk-1					
430	-14	260	9.12.99	9.12.99	Hs-1		Ha-3		Hr-3	

Table 1 (Continued)

431	-13	323	11.12.99	11.12.99	Ax-3						
432	-17	287	11.12.99	11.12.99	Cro-3						
433	-13	278	11.12.99	13.12.99	Dai-12	-					
434	-26	249	13.12.99	15.12.99	Ax-1	-	Cro-6				
435	-34	236	13.12.99	18.12.99	Bxi-4	-	Hr-1				
436	-14	170	13.12.99	20.1.00	?-1	-	Dao-11	-	Dao-6	Hr-1	
					Fkc-41	Ekc-27	Dkc-23	-	Fkc-42	Fkc-50	
					-	-	-	Dkc-40	Dkc-35	Dac-40	
437	11	173	15.12.99	17.12.99	Ax-2	-	Hs-4	Hr-1			
438	-23	241	15.12.99	15.12.99	Ax-2		Hr-1				
439	19	219	17.12.99	18.12.99	Ax-2	Ax-2					
440	18	118	17.12.99	23.1.99	?-1	Fho-9					
					-	-	Fho-17	-	-	-	
					Hh-1	-	-	Fkc-37	Hk-1	Hk-1	
					-	Hh-1	-	Hh-5	Hh-8	Hh-6	
441	11	109	18.12.99	19.12.99	?-2	Ha-2					
442	-21	123	19.12.99	19.12.99	Ax-1						
443	20	31	26.12.99	26.12.99	Bxi-7						
444	37	14	26.12.99	4.1.00	Fko-8	-					
					Fko-8	-	-	-	-	-	
								Fko-4			
445	-23	121	26.12.99	26.12.99	Ax-1						



TABLE II

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
1	637 HE	---	556 IH	---	640 TA	983 NA	13131 SGA	---	947 TÇ	57 NA	996 TÇ	781 AK
2	423 YK	---	760 TA	---	947 TÖ	---	11101	131135 SGA	---	811 TA	858 IHÇ	884 IHÇ
3	---	115 SB	763 SB	---	541 IH	1178 SGA	1075 TÇ	10123 SB	632 YK	920 TÇ	671 AK	526 TA
4	---	---	1060 MB	643 HE	838 NA	1253 SB	1161 TA	989 HÇ	---	847 IH	1061 TÇ	737 TA
5	---	15 TÇ	9102 TÇ	450 IH	1045 SB	1376 HE	9119 HE	998 SGA	634 YK	1242 SB	---	425 TÖ
6	---	26 HE	943 YK	656 HÇ	---	1598 TÖ	1092 IH	11183 HÇ	638 TA	1172 NA	1063 TA	632 SB
7	836 HÇ	---	431 HE	654 SB	1148 TÇ	971 IH	1149 AK	---	653 AK	1072 AK	979 TÇ	---
8	421 TÇ	312 IH	422 SB	858 SGA	1487 HE	1176 SGA	1057 SB	---	932 YK	---	12105 SB	---
9	418 HE	414 SGA	732 HE	857 TÇ	13102 TA	1373 SB	1076 HÇ	840 MB	742 TA	---	---	628 IHÇ
10	520 YK	525 SB	433 IH	686 TA	887 IH	1198 HÇ	---	538 SGA	470 AK	11126 SB	---	---
11	---	743 NA	556 SGA	---	995 TA	1291 TÇ	1184 TÇ	439 HÇ	561 YK	1263 SB	13195 IHÇ	855 YK
12	36 SB	---	---	653 IH	767 SB	11125 TA	---	540 SGA	563 TÇ	1296 IH	---	---
13	320 SGA	1079 YK	440 TÖ	733 TA	536 NA	11119 TÖ	968 TA	740 SB	899 AK	12131 AK	---	929 TÇ
14	430 NA	---	---	---	753 TÇ	11116 IH	754 SB	628 HE	7101 NA	11134 SB	8141 TA	---
15	---	10123 IH	368 IH	634 HÇ	958 HE	1270 HÇ	568 NA	621 HE	774 HÇ	---	9122 TÇ	765 AK
16	588 MB	1275 HÇ	569 NA	738 TÇ	764 TÖ	1065 SB	---	521 TÇ	9101 TA	493 TÖ	---	---
17	579 TA	1064 SB	---	742 HE	643 IH	761 NA	643 TÖ	39 NA	8104 AK	---	---	653 HE
18	---	963 SGA	---	631 TA	859 HÇ	648 TÇ	736 HE	321 TÇ	963 TA	8144 SB	---	678 HE
19	---	---	---	421 IH	640 TÖ	631 TÖ	744 IH	428 IH	---	---	14115 HE	563 TÖ
20	---	937 HE	---	528 TA	755 SGA	713 TA	839 NA	532 IH	---	---	---	---
21	---	1136 YK	725 TA	---	769 TÇ	939 TÇ	754 SB	524 HE	542 SGA	---	9108 SB	---
22	544 MB	---	---	325 NA	779 TA	1255 TA	670 SGA	646 HE	530 SB	---	15167 AK	---
23	---	35 NA	34 TA	332 TÖ	647 TÖ	1342 SB	856 SB	646 HE	636 NA	---	---	---
24	---	---	523 IH	522 TÖ	639 TÇ	---	884 HE	---	418 TÇ	596 YK	---	---

Table II (Continued)

25	1115 IH	4119 HÇ	4110 NA	4117 HE	8336 NA	---	10189 HE	12177 HE	3110 HE	61115 TA	---	---
26	1114 HÇ	3128 TÇ	414 SB	4126 İH	8161 SB	---	7163 SGA	11190 HÇ	418 TÖ	81188 İHÇ	6165 TA	5155 YK
27	419 SB	5135 HE	213 TA	4130 HÇ	10153 HÇ	141143 HE	12178 SB	---	317 İH	81159 AK	8169 TÇ	---
28	314 TA	6146 TA	---	4139 SB	10164 TÇ	121201 İH	13170 SGA	111160 YK	5112 HÇ	8189 İHÇ	101108 SB	---
29	---	---	---	5128 SGA	12159 HE	---	13181 SB	---	6117 SB	101154 TA	---	---
30	2110 HE	---	---	5146 TÇ	9163 TA	10195 SB	131110 HÇ	131154 YK	7119 SGA	---	4153 İHÇ	---
31	---	---	---	8162 İH	---	---	---	9183 AK	---	9168 TÖ	---	---

TABLE III

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
1	97	---	106	---	100	173	261	---	137	57	186	151
2	63	---	130	---	137	---	211	265	---	91	138	164
3	---	25	133	---	91	188	175	223	92	110	131	76
4	---	---	160	103	118	173	177	179	---	127	161	107
5	---	15	192	90	145	206	209	188	94	62	---	65
6	---	26	133	106	---	248	192	193	98	182	163	92
7	116	---	71	114	158	161	159	---	113	172	169	---
8	61	42	62	138	227	186	157	---	122	---	225	---
9	58	54	102	137	232	203	176	120	112	---	---	88
10	70	75	73	146	167	208	---	88	110	136	---	---
11	---	113	106	---	185	211	194	79	111	183	325	135
12	36	---	---	113	137	235	---	90	113	216	---	---
13	50	179	80	103	86	225	158	110	179	251	---	119
14	70	---	---	---	123	226	124	88	171	244	212	---
15	---	223	98	94	148	190	118	81	144	---	---	135
16	108	195	119	108	134	165	---	71	191	133	---	---
17	129	164	---	112	103	131	103	39	184	---	---	113

Table III (Continued)

18	---	153	---	91	139	108	106	51	153	194	---	138
19	---	---	---	61	100	91	114	68	---	---	255	113
20	---	127	---	78	125	83	119	82	---	---	---	---
21	---	146	95	---	139	129	124	74	92	---	198	---
22	94	---	---	55	149	175	130	106	80	---	317	---
23	---	35	34	62	107	172	136	106	96	---	---	---
24	---	---	73	72	99	---	164	---	58	146	---	---
25	25	59	50	57	116	---	189	197	40	175	---	---
26	14	58	44	66	141	---	123	200	48	268	125	105
27	49	85	23	70	153	283	108	---	37	239	149	---
28	34	106	---	79	164	321	200	270	62	169	208	---
29	---	---	---	78	179	---	211	---	77	254	---	---
30	30	---	---	96	153	195	240	284	89	---	93	---
31	---	---	---	---	142	---	---	173	---	158	---	---
Mean	65	99	90	93	140	188	166	137	108	170	191	114

TABLE IV

Evolution Type	A	B	C	D	E	F	H	Total
Number of Groups	248	89	266	355	222	78	589	1982
Percentage of Numbers	12,51	4,49	13,42	17,91	11,2	3,94	29,72	100

HÇ : Hülya Çalışkan  
 MB : Mevlana Başal  
 SB : Selçuk Bilir  
 AK : Ali Kılıçık  
 YK : Yüksel Karataş  
 TÇ : Taşkın Çay  
 İHÇ, İH : İpek Hamami Çay  
 NA : Nuroi Al  
 TÖ : Tuncay Özişik  
 HE : Hasan Esenoğlu  
 TA : Tansel Ak  
 SGA : Serap Ak