

## A CONTRIBUTION TO THE ANALYSIS OF PAIRS OF QUASICOMPLANAR ORBITS OF NUMERATED ASTEROIDS

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We have presented the distribution of quasicomplanar pairs of numerated asteroids with respect to mutual inclination of their orbits. Mean values of these inclinations are determined for three tables. The share of numerated asteroids in quasicomplanar pairs is tabulated when the upper limits of the mutual inclination of orbits are  $0^{\circ}500$ ,  $0^{\circ}300$  and  $0^{\circ}100$ .

We have established, in our previous paper (1), the pairs of quasicomplanar asteroids in the most certain way, by computing mutual inclinations  $I$  of their orbits, taking them into account up to given limits. Use was made of orbital elements of asteroids numerated in (2).

In Table I the distribution is presented of 2166 quasicomplanar pairs of asteroids whose mutual inclination of their orbits does not exceed  $0^{\circ}500$ . In intervals half-open to left for the mutual inclination  $I$  of orbital planes, from the first column, with intervals of  $0^{\circ}010$ , we have found the corresponding number  $N$  of pairs in the second column; in the third column the same number is expressed in percents  $N\%$  with respect to the 2166 pairs of numerated asteroids. We see that  $\text{Min } N = 1$  or  $0.05\%$  for  $0^{\circ} < I \leq 0^{\circ}010$ , and  $\text{Max } N = 89$  or  $4.11\%$  for  $0^{\circ}480 < I \leq 0^{\circ}490$ . The mean value of mutual inclinations of orbits of these pairs is  $I_m = 0^{\circ}332$ .

Table II gives the distribution corresponding to 806 found pairs for  $I \leq 0^{\circ}300$ . The greatest number here is 57 pairs or  $7.07\%$  with respect to the total of 806 pairs, near the upper limit of the mutual inclination of orbits, i. e. for  $0^{\circ}280 < I \leq 0^{\circ}290$ . For these asteroids the mean value of mutual inclination of their orbits is  $I_m = 0^{\circ}202$ .

Table III gives the distribution for 80 pairs of asteroids whose mutual inclination of orbits satisfies the condition  $I \leq 0^{\circ}100$ . Here  $\text{Max } N = 17$  or  $21.25\%$ , with respect to all 80 pairs, for  $0^{\circ}090 < I \leq 0^{\circ}100$ , and  $I_m = 0^{\circ}066$ .

From corresponding tables in previous paper (1) it is easy to find which quasicomplanar pairs of numerated asteroids are among the  $N$  for the corresponding interval of inclination  $I$ .

In Fig. 1 we have the graphical picture of Table I, which allows us to see that the distribution of quasicomplanar pairs of asteroids, with respect to mutual inclinations of their orbits, is almost linear, as could have been expected.

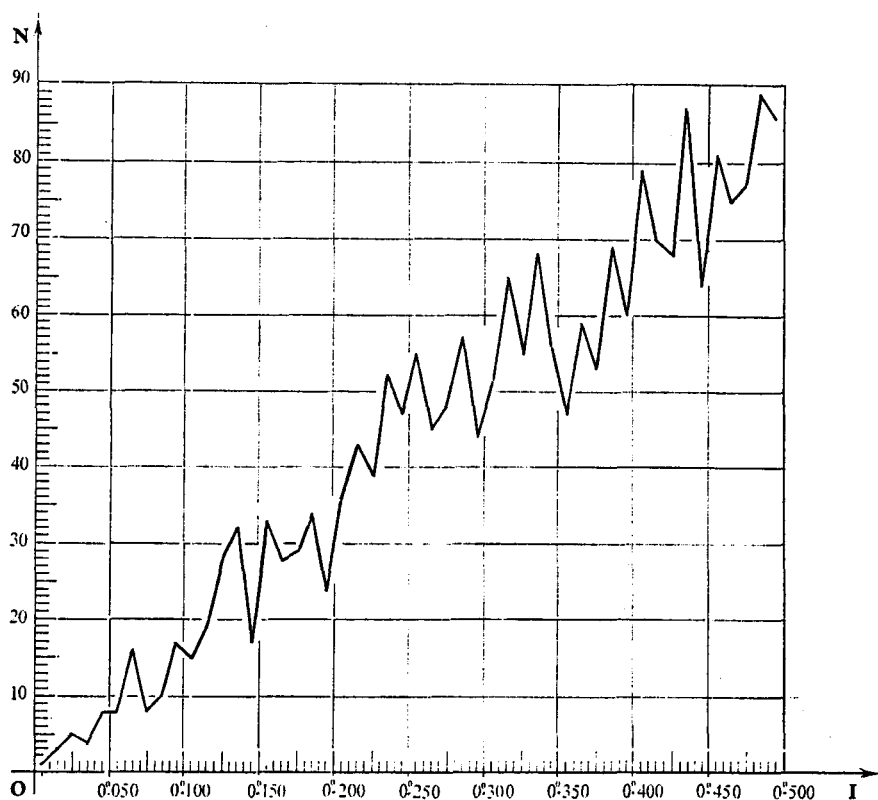


Fig. 1

In Table IV we have 1289 numerated asteroids, which form 2166 quasicomplanar pairs with  $I \leq 0.500$ . The first column gives the numbers  $N_0$  of numerated asteroids from (2) which share in the quasicomplanar pairs. In the second column the number  $n$  is determined of how many times a particular asteroid appears in pairs. So the greatest number of times, 14, is found with the asteroid  $N_0$  291. 13 times in a pair appear 2 asteroids, 12 times 1 asteroids, 11 times 10 asteroids and 10 times in a pair appear 20 asteroids. It is easy to see, from this Table, which are the numerated asteroids.

Table V contains 854 numerated asteroids, which form 806 pairs with  $I \leq 0.300$ . Asteroid  $N_0$  1615 shares the greatest number of times, 7, in a quasicomplanar pair. 5 asteroids share in a pair 6 times, 27 numerated asteroids share it 5 times, which can be easily determined from this Table.

In Table VI we have 148 numerated asteroids, which form 80 pairs with  $I \leq 0.100$ .

From previous paper (1) we find that  $\text{Min } I = 0.010$  for the pair of asteroids 846 *Lipperta* and 1045 *Michela*, where  $\Delta\Omega = 1.256$ ,  $\Delta i = 0.008$ . Also, we see that, from Table I and II (1),  $\text{Min } \Delta\Omega = 0.001$  for the pair 84 and 227,

where  $\Delta i = 0^{\circ}184$ ,  $I = 0^{\circ}184$ ; and, from Table III (1),  $\text{Min } \Delta \Omega = 0^{\circ}011$  for the pair 414 and 1655, where  $\Delta i = 0^{\circ}017$ ,  $I = 0^{\circ}017$ . We have, from Table I (1),  $\text{Min } \Delta i = 0^{\circ}000$  for the pair 580 and 1684, where  $\Delta \Omega = 6^{\circ}841$ ,  $I = 0^{\circ}435$  and, also, for the pair 848 and 1672, where  $\Delta \Omega = 24^{\circ}202$ ,  $I = 0^{\circ}423$ ; and, from Table II and III (1), we find that  $\text{Min } \Delta i = 0^{\circ}001$  for the pair 211 and 1147, where  $\Delta \Omega = 0^{\circ}718$ ,  $I = 0^{\circ}049$ , and for the pair of asteroids 461 and 561, where  $\Delta \Omega = 10^{\circ}976$ ,  $I = 0^{\circ}275$  from Table I and II (1).

All above stated represents a contribution to the analysis of quasicomplanar asteroids, which can help us to acquire a better knowledge of the structure of asteroidal ring.

Computation was made on IBM 360/44 in the Mathematical Institute of S. R. of Serbia.

TABLE I

$I \leq 0^{\circ}500$ , 2166 pairs,  $I_m = 0^{\circ}332$

$I$	$N$	$N\%$	$I$	$N$	$N\%$	$I$	$N$	$N\%$
$0^{\circ}001 \times$			$0^{\circ}001 \times$			$0^{\circ}001 \times$		
0 — 10	1	0.05	170 — 180	29	1.34	340 — 350	56	2.59
10 — 20	3	0.14	180 — 190	34	1.57	350 — 360	47	2.17
20 — 30	5	0.23	190 — 200	24	1.11	360 — 370	59	2.72
30 — 40	4	0.18	200 — 210	36	1.66	370 — 380	53	2.45
40 — 50	8	0.37	210 — 220	43	1.99	380 — 390	69	3.19
50 — 60	8	0.37	220 — 230	39	1.80	390 — 400	60	2.77
60 — 70	16	0.74	230 — 240	52	2.40	400 — 410	79	3.65
70 — 80	8	0.37	240 — 250	48	2.22	410 — 420	70	3.23
80 — 90	10	0.46	250 — 260	55	2.54	420 — 430	68	3.14
90 — 100	17	0.78	260 — 270	45	2.08	430 — 440	87	4.02
100 — 110	15	0.69	270 — 280	48	2.22	440 — 450	64	2.95
110 — 120	19	0.88	280 — 290	57	2.63	450 — 460	81	3.74
120 — 130	28	1.29	290 — 300	44	2.03	460 — 470	75	3.46
130 — 140	32	1.48	300 — 310	51	2.35	470 — 480	78	3.60
140 — 150	17	0.78	310 — 320	65	3.00	480 — 490	89	4.11
150 — 160	33	1.52	320 — 330	55	2.54	490 — 500	86	3.97
160 — 170	28	1.29	330 — 340	68	3.14			

TABLE II

$I \leq 0^{\circ}300$ , 806 pairs,  $I_m = 0^{\circ}202$

$I$	$N$	$N\%$	$I$	$N$	$N\%$	$I$	$N$	$N\%$
$0^{\circ}001 \times$			$0^{\circ}001 \times$			$0^{\circ}001 \times$		
0 — 10	1	0.12	100 — 110	15	1.86	200 — 210	36	4.47
10 — 20	3	0.37	110 — 120	19	2.36	210 — 220	43	5.34
20 — 30	5	0.62	120 — 130	28	3.47	220 — 230	39	4.84
30 — 40	4	0.50	130 — 140	32	3.97	230 — 240	52	6.45
40 — 50	8	0.99	140 — 150	17	2.11	240 — 250	48	5.96
50 — 60	8	0.99	150 — 160	33	4.09	250 — 260	55	6.82
60 — 70	16	1.99	160 — 170	28	3.47	260 — 270	45	5.58
70 — 80	8	0.99	170 — 180	29	3.60	270 — 280	48	5.96
80 — 90	10	1.24	180 — 190	34	4.22	280 — 290	57	7.07
90 — 100	17	2.11	190 — 200	24	2.98	290 — 300	44	5.46

TABLE III  
 $I \leq 0^{\circ}100$ , 80 pairs,  $I_m = 0^{\circ}066$

I	N	N%	I	N	N%
0 — 10	1	1.25	50 — 60	8	10.00
10 — 20	3	3.75	60 — 70	16	20.00
20 — 30	5	6.25	70 — 80	8	10.00
30 — 40	4	5.00	80 — 90	10	12.50
40 — 50	8	10.00	90 — 100	17	21.25

TABLE IV

$N_0$	$n$	$N_0$	$n$	$N_0$	$n$	$N_0$	$n$	$N_0$	$n$	$N_0$	$n$
3	1	63	7	122	11	187	1	249	2	310	2
4	1	64	7	124	2	189	6	251	5	311	5
5	3	65	2	125	2	191	4	252	3	312	1
6	1	66	7	126	6	192	2	253	3	314	1
7	3	67	4	127	1	195	2	254	5	315	7
9	2	68	1	128	2	196	1	257	3	316	7
10	5	69	2	129	1	197	3	259	2	317	11
11	5	72	4	131	7	199	1	261	8	318	2
12	3	73	9	136	1	200	1	262	3	319	2
13	1	74	1	138	6	201	2	263	7	320	2
14	1	75	7	139	1	202	2	264	1	321	7
15	1	76	5	140	6	203	1	266	1	322	3
16	4	77	4	142	4	205	1	267	2	324	2
19	8	78	1	143	2	206	1	268	8	325	1
20	7	79	4	144	8	207	2	269	1	327	2
21	5	80	1	146	1	208	6	270	6	329	1
23	1	81	6	147	5	209	1	271	3	331	1
24	8	82	5	149	5	210	2	272	4	332	6
26	3	83	4	150	5	211	8	274	5	333	5
27	3	84	2	151	3	212	2	275	4	334	4
28	2	85	1	152	1	213	1	277	7	335	4
29	5	86	1	153	2	214	3	278	1	336	2
30	3	90	10	155	2	215	9	279	10	337	4
32	2	91	9	156	1	217	1	280	3	338	1
33	6	92	2	158	6	218	1	281	3	339	2
34	1	94	4	159	3	219	1	282	2	340	4
35	4	97	4	160	2	220	1	283	1	341	3
37	7	100	4	161	1	222	6	284	2	342	2
39	5	101	1	162	3	223	8	288	5	343	4
40	1	102	2	163	7	224	4	289	3	345	1
41	1	103	1	165	2	227	2	291	14	346	1
42	2	104	4	166	2	228	3	294	4	347	3
43	8	106	6	167	10	229	7	295	1	348	1
44	4	107	2	168	4	231	2	296	6	349	2
46	6	108	6	169	4	232	1	297	1	350	1
47	9	109	4	170	1	235	4	298	3	351	2
48	3	110	7	171	8	236	2	299	3	352	3
49	3	111	5	173	1	237	2	300	9	353	4
50	3	112	3	174	1	238	2	301	3	355	8
51	2	113	1	175	3	239	2	302	5	356	5
52	1	114	7	177	6	240	10	303	2	357	1
53	6	116	5	178	9	241	1	304	1	358	2
55	3	117	1	179	3	242	1	305	5	359	2
57	1	118	3	180	7	243	7	306	1	360	3
58	6	119	5	182	4	244	6	307	2	363	2
60	3	120	2	184	4	245	7	308	4	364	3
62	10	121	1	186	1	248	2	309	5	365	1

TABLE IV (continued)

№	n	№	n	№	n	№	n	№	n	№	n
367	5	453	3	533	5	627	3	720	8	822	7
368	2	454	2	534	8	628	2	722	5	823	6
371	2	457	1	535	1	629	1	723	6	824	2
373	1	458	2	537	3	630	2	724	1	825	11
374	2	459	1	538	2	632	3	725	4	826	2
376	3	460	5	539	2	633	2	726	2	827	2
378	3	461	10	540	8	634	1	727	1	828	5
379	11	462	8	541	2	636	3	728	4	829	2
380	3	463	1	542	1	637	9	730	2	830	2
381	1	464	2	543	1	638	1	731	2	831	2
383	8	465	4	544	1	639	1	734	1	832	5
384	4	467	1	545	1	640	2	735	1	833	2
388	4	468	10	548	4	641	10	736	5	834	6
389	2	469	1	549	4	642	1	737	1	835	3
394	2	470	2	551	9	643	1	738	4	836	2
395	7	474	1	553	5	644	1	740	1	837	1
396	5	476	2	554	3	645	1	741	1	838	1
398	1	477	4	555	5	648	1	742	3	840	1
399	1	478	1	556	2	649	1	744	2	841	5
400	1	479	2	557	5	650	5	748	5	842	1
401	2	481	1	558	4	653	4	749	2	843	5
402	2	482	2	559	3	655	2	750	4	846	6
406	2	483	1	560	1	656	6	752	2	847	4
407	1	484	2	561	9	657	1	753	1	848	8
408	4	486	1	562	1	658	5	755	4	851	5
410	2	488	2	563	1	659	5	757	1	854	3
411	1	490	1	566	7	661	4	758	5	855	1
412	3	491	1	567	1	662	5	760	2	857	7
413	1	492	8	569	5	665	1	761	6	858	3
414	2	494	3	570	3	668	1	763	4	859	1
415	2	495	2	571	7	669	1	765	3	862	1
417	1	496	4	572	2	670	1	767	8	866	1
418	1	497	7	573	2	671	7	769	2	867	5
419	6	498	1	574	4	672	2	770	3	868	1
420	1	499	4	575	1	673	2	771	1	870	2
421	3	500	1	576	1	674	1	775	3	871	4
422	5	501	1	577	5	678	1	778	2	872	1
423	1	503	5	578	3	682	1	782	6	873	3
424	2	505	1	580	9	684	4	783	1	874	1
425	3	507	2	583	1	685	5	784	1	875	1
427	4	509	2	586	6	686	2	788	1	876	1
428	1	510	2	589	1	688	2	794	5	877	4
429	1	511	1	590	1	689	1	797	3	878	11
430	2	512	1	591	2	694	1	798	2	882	2
431	5	513	1	592	2	696	1	799	5	883	2
433	2	514	5	596	1	698	3	800	2	884	3
435	7	515	7	597	1	699	2	802	8	885	5
438	2	516	2	603	1	700	1	804	1	887	2
440	3	517	1	607	1	701	3	807	3	889	1
441	3	518	1	608	3	703	7	808	3	890	1
442	3	519	2	609	1	706	2	810	8	891	3
443	2	521	3	611	1	707	1	811	7	896	3
444	3	522	4	613	3	708	6	812	1	898	2
446	1	523	1	614	1	710	10	813	4	901	8
447	5	524	1	615	8	711	4	815	1	902	2
448	1	525	5	617	1	712	1	816	1	903	4
449	5	526	7	620	4	716	2	818	1	904	1
450	1	527	3	621	8	717	3	819	2	905	1
451	1	529	2	622	3	718	2	820	2	906	4
452	8	530	3	625	3	719	1	821	3	908	1

TABLE IV (continued)

$N_0$	$n$	$N_0$	$n$	$N_0$	$n$	$N_0$	$n$	$N_0$	$n$	$N_0$	$n$
913	3	1008	2	1089	5	1166	1	1256	3	1336	9
915	4	1009	1	1091	5	1167	4	1257	2	1338	2
916	2	1010	4	1092	3	1169	2	1258	4	1339	1
917	3	1011	1	1094	1	1171	5	1259	8	1340	9
918	1	1012	6	1095	1	1173	2	1260	1	1341	1
919	2	1014	5	1096	3	1174	1	1261	9	1343	6
920	1	1015	2	1097	6	1176	2	1264	1	1344	6
922	1	1016	3	1098	2	1177	1	1265	1	1345	1
923	1	1017	2	1100	7	1178	1	1267	6	1348	2
929	7	1018	4	1102	1	1179	1	1268	4	1349	1
931	3	1020	5	1104	3	1180	1	1269	4	1350	4
932	1	1023	2	1105	1	1181	3	1270	4	1351	1
933	2	1026	4	1106	2	1182	4	1271	2	1352	4
934	1	1027	8	1107	1	1183	8	1272	3	1353	1
935	2	1028	1	1108	1	1185	4	1273	2	1354	3
936	6	1029	9	1109	3	1186	2	1274	4	1357	1
937	3	1032	1	1110	2	1187	3	1277	2	1358	7
938	6	1033	1	1111	5	1188	8	1278	2	1359	3
939	2	1034	3	1112	1	1189	1	1279	4	1363	9
940	1	1037	5	1113	2	1190	4	1280	1	1364	2
941	3	1038	2	1114	2	1194	1	1283	1	1365	2
946	3	1039	1	1115	1	1195	2	1284	2	1369	1
947	1	1043	2	1117	1	1198	4	1285	2	1370	3
948	1	1044	4	1119	1	1199	1	1286	4	1374	4
950	1	1045	6	1120	2	1200	5	1287	3	1375	6
951	3	1046	1	1121	4	1201	2	1288	4	1376	1
952	1	1047	3	1122	6	1202	4	1289	6	1377	4
954	7	1049	1	1123	1	1203	4	1290	1	1378	4
956	2	1051	1	1124	2	1204	6	1291	1	1379	1
958	2	1053	1	1125	10	1205	1	1292	4	1380	2
959	6	1054	2	1126	2	1206	2	1293	2	1381	6
960	4	1055	4	1127	1	1207	1	1294	2	1382	5
962	7	1056	3	1128	7	1209	2	1295	3	1383	9
963	1	1057	6	1130	5	1210	1	1296	5	1384	1
965	1	1059	3	1131	10	1214	1	1297	4	1386	3
966	2	1060	5	1132	1	1216	1	1298	4	1387	8
967	7	1061	7	1133	4	1217	4	1300	2	1389	11
968	1	1062	5	1134	1	1218	5	1302	9	1391	2
969	4	1063	3	1135	6	1219	5	1303	2	1392	1
970	1	1064	1	1137	7	1220	3	1305	7	1393	6
971	1	1065	1	1140	1	1223	6	1307	9	1394	4
972	3	1066	1	1141	2	1224	2	1308	2	1396	4
973	1	1067	1	1142	7	1225	6	1310	1	1397	4
974	6	1068	1	1143	1	1226	1	1311	2	1403	3
975	7	1071	2	1144	1	1228	1	1313	1	1406	2
981	8	1072	2	1147	6	1229	7	1314	1	1407	3
982	1	1073	10	1148	2	1230	2	1315	1	1409	2
983	2	1074	9	1150	11	1231	1	1319	5	1410	2
985	4	1076	4	1152	3	1233	1	1320	2	1411	2
988	11	1077	3	1153	3	1237	1	1321	1	1412	5
991	7	1078	2	1154	7	1238	1	1324	5	1413	1
992	1	1079	7	1155	3	1239	1	1325	4	1414	4
993	10	1080	8	1156	3	1242	2	1327	6	1415	4
994	1	1081	4	1157	2	1245	7	1328	5	1416	3
996	5	1082	13	1158	1	1247	13	1329	1	1417	1
999	1	1083	6	1159	2	1248	3	1330	1	1418	2
1002	1	1084	4	1160	2	1249	1	1331	5	1419	1
1003	10	1085	2	1161	1	1251	3	1332	6	1420	8
1004	5	1087	1	1162	10	1253	9	1334	3	1422	5
1007	2	1088	1	1163	2	1255	1	1335	5	1423	5

TABLE IV (continued)

№	n	№	n	№	n	№	n	№	n	№	n
1425	1	1489	8	1549	6	1618	9	1682	2	1742	8
1426	2	1491	3	1550	2	1619	2	1683	1	1743	1
1427	3	1492	4	1551	2	1621	3	1684	7	1744	4
1429	2	1493	2	1552	1	1622	3	1686	10	1745	6
1430	3	1494	5	1553	4	1623	8	1687	8	1746	3
1432	2	1495	1	1555	1	1624	11	1689	3	1748	5
1433	4	1496	5	1557	1	1627	2	1690	1	1749	4
1434	1	1497	6	1559	3	1630	2	1691	6	1751	1
1435	5	1500	4	1560	1	1631	4	1692	6	1752	5
1438	3	1501	4	1561	7	1632	7	1696	2	1754	1
1439	3	1502	2	1562	4	1633	5	1697	5	1755	4
1440	8	1504	3	1563	6	1634	1	1698	7	1756	2
1441	1	1505	2	1564	1	1635	10	1699	3	1757	5
1442	7	1507	3	1570	5	1636	2	1700	8	1758	2
1443	11	1510	1	1572	1	1637	1	1702	2	1759	5
1445	8	1511	4	1574	1	1638	8	1703	3	1760	2
1446	2	1512	1	1576	5	1639	4	1704	4	1761	7
1447	1	1513	4	1577	4	1640	2	1705	3	1762	7
1448	6	1514	2	1578	3	1643	4	1706	3	1763	4
1449	1	1515	2	1579	1	1644	2	1707	1	1764	9
1450	4	1516	2	1581	6	1645	4	1708	2	1765	2
1451	1	1517	4	1582	1	1646	2	1709	4	1766	2
1452	1	1518	1	1586	3	1647	4	1710	2	1767	1
1454	2	1519	1	1587	6	1648	6	1711	2	1768	5
1455	2	1522	4	1588	1	1649	2	1713	3	1769	3
1456	1	1523	4	1589	1	1650	5	1714	3	1770	1
1457	1	1524	1	1590	4	1651	1	1715	2	1771	4
1458	1	1525	1	1591	1	1652	4	1716	2	1772	3
1462	8	1526	3	1592	3	1653	3	1717	3	1773	4
1463	1	1527	1	1593	2	1655	3	1719	1	1774	10
1464	2	1528	3	1594	2	1661	7	1720	2	1776	1
1465	1	1529	1	1595	4	1662	1	1722	3	1777	4
1466	1	1530	4	1596	1	1663	7	1723	2	1778	7
1468	1	1532	2	1597	3	1664	5	1724	1	1779	5
1469	1	1533	4	1598	4	1665	2	1725	4	1780	2
1470	4	1534	1	1599	5	1666	5	1726	6	1782	10
1472	3	1535	2	1601	6	1667	6	1728	1	1783	1
1475	3	1536	6	1602	4	1668	7	1729	7	1784	3
1478	1	1537	7	1603	2	1669	7	1731	2	1785	3
1479	3	1538	1	1606	3	1671	4	1732	4	1786	2
1480	7	1539	12	1607	2	1672	9	1733	6	1788	8
1481	6	1540	1	1608	6	1673	3	1734	1	1789	3
1482	2	1541	8	1609	2	1674	9	1736	5	1790	6
1483	5	1542	4	1610	8	1675	2	1737	2	1791	5
1485	4	1543	1	1611	4	1676	7	1738	3	1792	1
1486	8	1544	6	1613	2	1678	3	1739	2	1793	7
1487	9	1545	4	1615	10	1680	5	1740	6	1795	2
1488	1	1547	1	1617	1	1681	2	1741	4		

TABLE V

№	n	№	n	№	n	№	n	№	n	№	n
5	2	116	1	228	1	329	1	451	1	571	2
7	1	117	1	229	1	331	1	452	3	572	1
10	1	118	1	231	1	332	1	453	2	574	3
12	1	119	4	232	1	333	5	454	1	575	1
13	1	120	1	235	2	334	2	460	3	577	2
14	1	122	5	236	1	335	3	461	3	578	1
16	3	124	1	238	1	336	1	462	3	580	3
19	1	125	1	240	2	337	2	463	1	586	2
20	2	126	1	243	2	338	1	464	1	589	1
21	4	127	1	244	1	339	1	465	2	590	1
24	2	131	3	245	2	340	3	468	4	591	1
26	1	136	1	251	3	346	1	476	1	592	1
27	2	138	2	252	1	347	1	477	3	607	1
29	2	140	3	253	2	348	1	478	1	608	2
33	3	142	4	254	2	349	1	479	1	611	1
35	2	144	2	259	1	350	1	482	1	613	1
37	2	147	1	261	2	353	3	484	1	615	2
39	2	149	4	263	3	355	5	486	1	620	1
40	1	150	2	264	1	356	2	488	1	621	5
41	1	151	1	266	1	358	1	492	3	625	1
43	2	153	1	268	4	359	1	494	1	627	1
44	2	155	1	269	1	360	1	495	1	628	1
46	1	158	1	270	3	365	1	496	1	629	1
47	4	159	2	272	1	367	2	497	2	632	2
48	1	160	1	274	1	368	1	499	2	636	1
50	2	162	1	275	1	376	2	501	1	637	4
51	1	163	4	277	2	378	1	505	1	638	1
53	2	166	1	278	1	379	3	507	1	640	2
55	1	167	2	279	6	380	1	510	1	641	4
58	3	168	4	280	1	383	5	513	1	643	1
62	3	169	1	281	1	384	1	514	1	645	1
63	2	171	4	282	1	388	1	515	4	650	2
64	3	175	1	283	1	389	1	518	1	653	2
66	2	177	2	284	1	394	1	522	2	655	2
67	2	178	2	288	2	395	2	525	2	656	2
72	1	179	1	289	2	396	2	526	3	658	3
73	3	180	2	291	1	398	1	527	2	659	5
75	2	182	1	294	3	399	1	529	2	661	2
76	2	184	2	296	2	400	1	530	1	662	3
77	3	187	1	297	1	401	1	533	2	671	1
79	4	191	2	298	1	402	1	534	3	678	1
81	3	192	2	300	2	406	1	537	2	682	1
82	2	195	1	301	1	408	2	538	2	684	2
84	2	197	1	302	1	414	2	539	1	685	1
90	5	199	1	303	1	417	1	540	3	688	1
91	3	201	1	304	1	418	1	541	2	689	1
92	1	202	1	305	2	419	3	542	1	694	1
94	3	205	1	308	1	421	2	548	2	698	2
97	3	208	2	309	5	422	2	549	2	699	1
100	2	209	1	311	3	423	1	551	4	703	2
102	1	210	1	315	2	425	1	553	1	708	4
104	1	211	1	316	2	429	1	555	1	710	4
106	3	212	1	317	3	431	3	557	3	711	2
107	2	215	2	318	1	433	1	559	2	717	2
108	5	217	1	319	1	435	1	561	3	718	1
109	3	220	1	320	1	441	2	562	1	720	3
110	2	222	2	321	3	442	2	566	1	722	2
111	1	223	3	322	3	446	1	567	1	723	4
112	1	224	1	324	1	447	2	569	3	725	2
114	3	227	2	327	2	449	3	570	2	726	1



TABLE V (continued)

№	n	№	n	№	n	№	n	№	n	№	n
728	2	885	1	1037	1	1182	1	1305	4	1427	1
730	1	891	1	1038	1	1183	1	1307	2	1429	1
735	1	896	2	1044	2	1186	1	1308	2	1430	2
736	1	901	2	1045	4	1187	1	1310	1	1433	1
737	1	902	1	1054	1	1188	3	1319	2	1435	1
738	1	903	3	1055	2	1190	1	1324	2	1438	1
740	1	906	1	1056	3	1198	2	1327	3	1439	1
742	3	913	1	1057	2	1200	3	1328	2	1440	1
748	2	915	2	1059	1	1201	1	1330	1	1441	1
750	3	916	1	1060	1	1203	3	1331	2	1442	4
755	2	918	1	1061	6	1204	3	1332	2	1443	5
758	3	920	1	1062	1	1206	1	1334	3	1445	2
761	2	929	3	1063	2	1207	1	1335	1	1446	1
763	2	931	2	1064	1	1210	1	1336	5	1448	2
767	4	933	1	1068	1	1214	1	1340	4	1450	3
770	2	936	3	1072	1	1217	3	1343	1	1452	1
775	1	938	3	1073	5	1218	1	1344	1	1454	1
778	1	939	2	1074	3	1219	2	1349	1	1456	1
782	4	940	1	1078	1	1220	1	1350	1	1462	3
784	1	941	1	1079	2	1223	3	1351	1	1463	1
788	1	946	1	1080	2	1224	1	1352	2	1465	1
794	3	948	1	1082	5	1225	3	1354	2	1466	1
797	1	951	1	1083	3	1226	1	1357	1	1468	1
798	1	952	1	1084	3	1229	4	1358	1	1469	1
799	2	954	3	1085	1	1238	1	1359	2	1472	2
800	2	956	2	1089	2	1239	1	1363	4	1479	2
802	2	958	1	1092	1	1245	3	1364	1	1480	4
807	2	959	2	1095	1	1247	3	1365	1	1481	4
808	1	960	1	1096	1	1248	1	1370	2	1485	2
810	4	962	2	1097	1	1249	1	1374	2	1486	4
812	1	963	1	1100	4	1253	3	1375	1	1487	5
813	1	967	3	1104	2	1256	1	1377	2	1488	1
819	1	969	3	1105	1	1258	3	1378	1	1489	5
821	2	971	1	1110	2	1259	5	1381	5	1492	1
822	2	972	1	1111	3	1260	1	1382	3	1493	1
825	4	974	2	1113	2	1261	6	1383	4	1494	1
826	1	975	3	1114	1	1267	5	1384	1	1496	3
827	2	981	4	1117	1	1268	1	1387	2	1497	4
831	1	985	2	1120	1	1269	2	1389	3	1500	1
832	3	988	4	1121	2	1272	1	1391	1	1501	2
833	1	991	3	1122	4	1274	1	1393	2	1504	1
834	2	992	1	1125	4	1277	1	1394	1	1507	1
837	1	993	3	1131	5	1278	1	1396	2	1510	1
841	5	996	2	1133	1	1279	3	1397	1	1511	1
843	2	1003	5	1135	5	1284	1	1403	1	1513	2
846	4	1004	2	1142	3	1285	1	1406	1	1514	1
847	1	1007	1	1147	2	1287	1	1407	1	1515	1
848	2	1009	1	1148	1	1288	3	1409	1	1517	1
851	2	1010	1	1150	3	1289	2	1410	1	1518	1
854	1	1012	2	1152	2	1290	1	1412	3	1519	1
857	4	1014	3	1154	3	1291	1	1413	1	1522	2
858	1	1015	1	1155	1	1292	2	1414	1	1523	1
859	1	1016	1	1156	2	1293	1	1415	2	1525	1
866	1	1018	2	1159	1	1294	1	1416	2	1527	1
867	1	1020	1	1162	4	1295	1	1418	2	1533	3
871	2	1026	3	1167	2	1296	2	1420	4	1535	1
872	1	1027	3	1169	1	1297	1	1422	2	1536	2
873	2	1029	1	1171	3	1298	2	1423	1	1537	3
877	1	1033	1	1176	1	1300	1	1425	1	1539	6
878	4	1034	2	1181	1	1302	5	1426	1	1540	1

TABLE V (continued)

№	n	№	n	№	n	№	n	№	n	№	n
1541	5	1593	1	1639	1	1678	1	1717	1	1761	3
1542	3	1597	2	1640	2	1680	3	1722	1	1762	3
1544	1	1598	1	1645	4	1681	1	1724	1	1763	3
1545	2	1599	2	1647	1	1682	1	1725	2	1764	2
1549	2	1601	3	1648	1	1684	2	1729	2	1766	1
1550	1	1602	1	1649	1	1686	3	1731	1	1768	2
1551	2	1603	1	1650	1	1687	5	1732	2	1773	1
1552	1	1608	3	1651	1	1691	4	1733	3	1774	5
1553	1	1610	2	1652	1	1692	3	1736	4	1778	2
1557	1	1611	2	1653	2	1696	1	1737	2	1779	3
1559	2	1615	7	1655	2	1698	2	1740	1	1782	3
1560	1	1617	1	1663	5	1699	2	1741	3	1784	2
1563	2	1618	4	1664	1	1700	1	1742	3	1785	1
1564	1	1621	1	1665	1	1704	3	1744	2	1788	3
1570	4	1623	3	1666	2	1705	1	1745	3	1789	1
1572	1	1624	3	1667	1	1706	1	1746	3	1790	4
1576	4	1631	1	1668	3	1707	1	1748	1	1791	1
1577	1	1632	1	1669	1	1708	1	1749	1	1793	3
1581	2	1633	2	1672	2	1709	2	1752	1	1795	1
1587	1	1635	3	1673	1	1710	2	1754	1		
1590	1	1636	1	1674	6	1713	1	1755	1		
1591	1	1637	1	1675	1	1714	1	1759	4		
1592	1	1638	4	1676	1	1716	1	1760	2		

TABLE VI

№	n	№	n	№	n	№	n	№	n	№	n
20	1	321	2	708	1	1033	1	1267	1	1581	1
24	2	327	2	710	1	1018	1	1279	1	1599	1
29	1	333	1	711	1	1026	1	1289	1	1601	1
33	1	335	1	723	1	1034	1	1305	1	1610	1
37	1	339	1	761	1	1037	1	1308	1	1635	1
43	1	383	1	763	1	1045	1	1328	1	1640	2
66	1	414	1	784	1	1056	1	1331	1	1649	1
67	1	441	1	794	1	1073	1	1358	1	1653	1
73	1	442	1	799	1	1074	1	1381	1	1655	1
76	1	452	1	822	1	1079	1	1382	1	1663	1
79	2	460	2	832	1	1100	1	1383	1	1664	1
84	1	461	1	841	1	1135	2	1389	1	1678	1
107	1	525	1	846	1	1142	1	1393	1	1687	1
108	1	526	1	857	1	1147	1	1416	1	1704	1
110	1	534	1	878	1	1148	1	1418	2	1729	1
114	1	538	1	896	1	1167	1	1430	1	1736	1
142	1	557	1	901	1	1171	1	1443	1	1737	1
150	1	574	1	920	1	1183	1	1450	1	1759	1
159	1	615	1	931	1	1200	2	1481	1	1761	1
169	1	620	1	936	1	1204	1	1486	1	1774	1
184	1	627	1	969	1	1217	1	1496	1	1778	1
211	1	632	1	975	2	1220	1	1497	1	1782	1
279	1	658	1	985	1	1223	2	1519	1	1791	1
283	1	659	1	988	1	1259	2	1536	1		
300	1	682	1	993	1	1260	1	1559	1		

\*

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2. Институт теоретической астрономии Академии наук СССР. 1973, *Эфемериды малых планет на 1974 год*, Ленинград.